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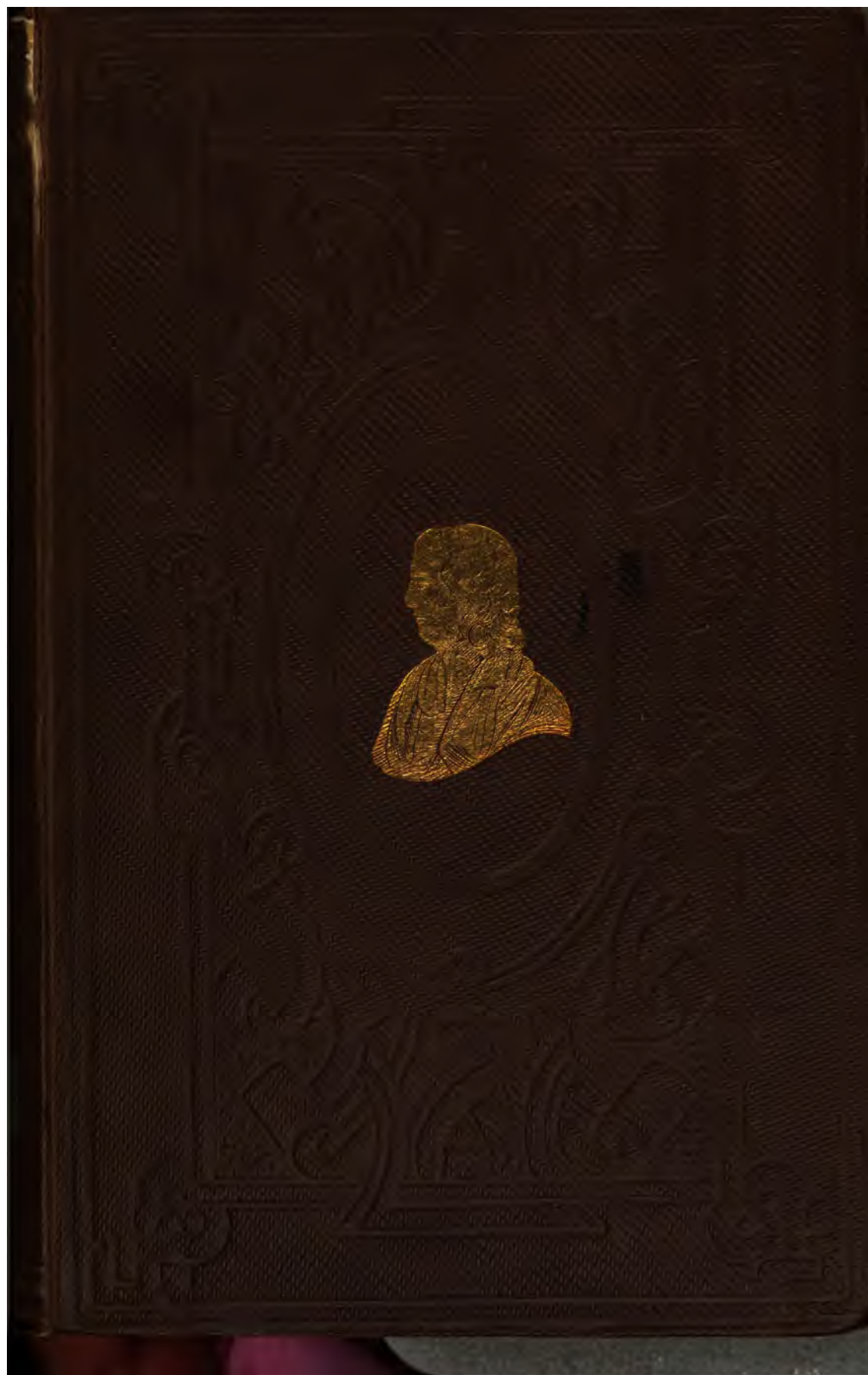
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2000

THE NEW SYDENHAM
SOCIETY.

INSTITUTED MDCCCLVIII.

VOLUME XLI.

A TREATISE ON
SYPHILIS.
HISTORICAL AND PRACTICAL.

BY

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IN TWO VOLUMES.

VOL. II.

TRANSLATED BY

G. WHITLEY, M.D.

THE NEW SYDENHAM SOCIETY,
LONDON.

MDCCCLXIX.

London and Aylesbury :
Printed by WATSON and HAZELL.



TREATISE ON SYPHILIS.

ARTICLE VII.—APPARATUS OF RESPIRATION.

THE difference of texture and of functions of the organs which enter into the composition of this apparatus induces us to study separately the affections of the larynx, the trachea, the bronchi, and the parenchyma of the lungs.

§ 1. Syphilitic affections of the larynx.

Morgagni, Epist. 42, Nos. 39 and 48; Epist. 44, No. 15, trad. de Destouet. *Altenhofer*, Russische Sammlung für Naturwissenschaft und Heilkunde, Bd. i. Heft 1. *Thomann*, Ann. institut. med. clin. Wirceburg, Vol. I. *Hawkins*, *The London Med. and Phys. Journal*, 1823. *Trousseau et Belloc*, Traité pratique de la phthisie laryngée oedémateuse. Paris, 1837. *Barth*, Bulletin de la Société anatomique, t. xv. 1849, pp. 170, 172. *Sestier*, Traité de l'angine laryngée oedémateuse, 1852, 88. *Nélaton*, *Gazette des hôpitaux*, 1855, No. 50. *Michaëlis*, Wochenblatt der K. K. Gesellschaft der Aerzte in Wien, 1855, No. 37. *Rul-Ogez*, *Gazette des hôpitaux*, 1856, No. 112. *Jones*, *British Medical Journal*, 1859. *Gunter*, Prager Vierteljahrschrift, 1857. *Pütha*, *ibid.*, 1859. *Virchow*, in Archiv für pathol. und physiol. Anat., xv. *Labbé*, Bulletin de la Société anatomique, July, 1857, p. 210. *Huguier*, Société de chirurgie, et *Gazette des hôpitaux*, June and July, 1856. *Hansen*, Hospit. Tidende, 1859, No. 1, and Schmidt's Jahrb., Bd. cv. p. 311. *Van Buren*, Maladies syphilitiques du larynx, in *New York Medical Times*, July 7th, 1860. *Czermack*, Der Kehlkopfspiegel, &c. Leipzig, 1860. See also Archiv. générales de médecine, t. i. p. 207, 1860. *Melch. Robert*, Nouveau Traité des maladies veneriennes. Paris, 1861, p. 554 et seq. *Ruhle*, Die Kehlkopfkrankheiten. Berlin, 1861; and Archiv. de médecine, 255, t. i., 1861. *Gibb*, *The Lancet*, January 5th, 1861; case in which a necrosed cartilage was coughed up. *Gilewski*, Wien. med. Wochenschrift, No. 18, 1861. *Gebhardt and Roth*, Archiv für pathol. Anat., 2nd series, t. i., first paper. *Turck*, Observat. sur les ulcères syphil. des parois de la cavité pharyngo-nasale, in Allgem. Wiener med. Zeitung, 1861, No. 48. *Turck*, Recherches cliniques sur diverses maladies du larynx, de la trachée

et du pharynx. Paris, 1862, p. 18. *Briddon*, Affections syphilitiques du larynx, *Americ. Med. Times*, December, 1862, p. 327. *Otto Jenistius*, De laryngitide syphilit. Dissertat. inaug. Greifswald, 1862. *E. Hamilton*, Syphilitic laryngitis, *Dublin Journal*, xxiii. *G. Lewin*, Ueber Krankh. einzelner Theile des Kehlkopfs., &c., *Virchow's Archiv*. xxiii. p. 587, 1862. *Davies*, *Med. Times and Gaz.*, 241, May, 1862. *Lud. Turck*, Die syphilit. Erkrankung des Kehlkopfs., *Allgem. Wien. med. Zeitung.*, viii. 43, 1864. *Dance*, Éruptions du larynx survenant dans la période secondaire de la syphilis, 1864.

The syphilitic lesions of the larynx which supervene in the course of the period of general eruption have the mucous membrane for their exclusive seat and, as we know, extend superficially rather than in depth. The opposite of this occurs in the affections of the tertiary period; the anatomical modifications observed in it are deep and circumscribed. Moreover, while the functional derangements in the former were slight and transient, we are struck with the degree of severity which these same derangements acquire in this latter phase of syphilis, and of their sometimes indefinite persistence.

ANATOMICAL STUDY.

The syphilitic laryngopathies do not differ, as regards their nature, from the manifestations already known; but as they vary with the tissue in the midst of which they develop themselves, we believe that, to make our description of them clear and simple, we cannot do better than remind the reader of the anatomical constitution of the larynx: mucous membrane and sub-mucous conjunctive tissue, cartilages and fibro-cartilages, muscles, vessels, and nerves; such are the various parts, any one of which may become the starting-point of the morbid process.

We shall inquire further on what may be the influence of syphilis upon the nerves of the larynx. Let us mention here that Bouisson* has pointed out the presence of gummy deposits in the muscles of that organ. And now let us study the changes most frequent in the larynx, those of the sub-mucous tissue and of the fibro-cartilages.

At an already advanced period in the evolution of syphilis, which is the transition period of some authors, but which appears to us rather to belong to the period of gummy products, the mucous mem-

* *Gaz. Médic.*, 1846, v. 595.

brane of the larynx sometimes becomes the seat of an eruption to a certain extent comparable to a tubercular syphilide. This eruption, which has been observed several times by Cusco, who has given it the name of "papulo-tubercular," was characterised in two cases by the presence, upon the surface of the inferior vocal cords, of prominent, greyish tubercles, of about the size of a millet-seed, by a simultaneous tumefaction of the superior vocal cords, and by an old injection of the supra-glottal portion of the mucous membrane.

It is at this same moment, or at least in this same period, that Turck observed the existence of more or less numerous ulcerations, which had their favourite seat and most marked characters upon the epiglottis. When at all persistent, these ulcerations show a tendency to extend in depth, and end by perforating the epiglottis completely. All round the ulcers, or even upon the whole remaining portion of the epiglottis, the mucous membrane is injected and generally presents considerable tumefaction, which may continue after cicatrisation.

The aryteno-epiglottidean folds, the mucous membrane covering the arytenoid cartilages, and the inferior cords, are so many points at which these same lesions are also met with. When they occupy the inferior vocal cords, the ulcers may spread in an antero-posterior direction and reach simultaneously both these folds. Variable in extent, they are surrounded by a zone of inflammation and frequently accompanied by irregular excrescences, or by erosions of the mucous membrane of the posterior wall of the larynx. When deep, they leave behind them a deformity of the vocal cords, a contraction of the larynx, and adhesions, all circumstances which indicate an advanced period in the evolution of the disease.

Side by side with these lesions, we observe, in the larynx and beneath the mucous membrane, or in the thickness of the fibrous tissues, deposits analogous to the gummy deposits in other parts of the body. These deposits show themselves, sometimes in the form of yellowish bands, more or less extensive and prominent, sometimes in the form of circumscribed deposits. In the former case, the epiglottis or the larynx are very especially affected; but we sometimes see the trachea and the bronchi participate in this change, as occurred in a case related by Wagner. Beneath the mucous membrane is seen a yellowish protuberance of firm consistence or somewhat soft, and which has often been described as a simple thickening either of that membrane or of the subjacent parts.* In the latter case, the

* See Barth, *Sur la laryngite syphilitique* (*Société anat.*, tt. x. and xv.).

anatomical modification appears in the form of vegetations (Hansen), but it is most frequently represented by small, firm, rounded tumours,* of the size of a pea or a lentil, which pass through the same phases as gummy tumours of the other organs, that is to say, that after becoming softened, they terminate in deep, more or less irregular ulcers, with a greyish, indurated floor, and slit edges, differing, consequently, from the superficial ulcerations which belong to the secondary period. The cicatrices which follow them are hard, whitish, thick, and frequently, by the retraction which they undergo, produce contractions and deformities more or less considerable in the canal of the larynx. This is not, however, the only evil consequence of these changes; there is another which is frequently still more serious, I mean œdema of the glottis, so well studied by Sestier. In a table inserted by that author into his work, chronic syphilitic laryngitis figures fourteen times in 157 cases, as starting-point of the œdema of the glottis.

The syphilitic change in the larynx does not always confine its action to the fibrous tissues; in certain cases, it invades the cartilages. Are these affected primarily, or secondarily in consequence of a modification of the mucous membrane? The question is difficult to solve. There is reason, however, to believe in the existence of a primary syphilitic perichondritis; but however the case may be, the ulcerations which are seen to supervene under these conditions are extensive and irregular; their edges are soft, greyish, and split, while the cartilage is more or less denuded and changed, often necrosed, and sometimes displaced and encrusted with calcareous salts.

These various determinations are not always easy to specify, and, if it be possible, by the aid of the microscope, to distinguish syphilitic ulcers from epithelial ulcerations, which are for the most part isolated and whose edges are always indurated, it is sometimes impossible to differentiate them from scrofulous or tubercular ulcerations. Syphilitic ulcers, however, as Barth remarks (*Bulletin de la Soc. anat.*, 15th year, p. 151), develop themselves from above downwards, occupy by preference the anterior surface and become cicatrised, to reproduce themselves at different points of the organ, while tubercular ulcers proceed from the lower portion, or even from the trachea towards the pharyngeal opening, do not become cicatrised, and invade

* Wilks, *The syphilitic affections of the internal organs*, gives a plate which represents a tumour of this nature situated in the upper part of the larynx.

chiefly the posterior surface of the epiglottis. Before they soften, syphilitic deposits upon the larynx cannot easily be confounded with tubercular granulations, which are always numerous and very small.

SYMPTOMATIC STUDY.

The symptoms which correspond to the lesions described above are objective, or functional.

The objective or physical symptoms now revealed by examination with the laryngoscope have the same characters as the lesions described above. Thus, ulcerations more or less deep, often multiple, with or without necrosis of the corresponding cartilages, such is what they present. It is not always easy, however, to ascertain the exact state of the different parts of the larynx. In one case of this kind, Turck met with an absolute impossibility of seeing the parts situated beneath the glottis, on account of a secondary inflammation of the superior and inferior vocal cords. Apart from the characters proper to this inflammation, there was seen, on the external half of the two inferior vocal cords, a longitudinal band strongly serrated, which could only be regarded as the upper edge of an ulcer situated upon the posterior wall of the larynx, which presumption was verified at the post-mortem examination.

The functional symptoms consist in derangements of phonation and respiration.

The change in the voice is generally very manifest and persistent. Whether there be swelling or destruction of the vocal cords, or obstruction of the glottis by small tumours, this phenomenon is most frequently observed, but in different degrees, of which the most complete is the total loss of the voice. The patients experience a sensation of uneasiness or pricking, and sometimes actual pain in the region of the larynx. In cases in which the existence of perichondritis was suspected, this latter phenomenon manifested itself with greater intensity by night than by day.

The derangements of respiration, which are more or less distressing, are subordinate to the anatomical lesions. The patients experience a sensation of dyspnoea and have a short cough, with or without expectoration. The expectoration, when there is any, is mucous or purulent, streaked with blood, and if the perichondrium be affected, may contain detritus of mucous membrane or of fragments of cartilage, as occurred in a case given by Dr. Gibb. It is clear

that, under these circumstances, the derangements of respiration may vary from simple uneasiness to the most complete dyspnoea. We may remark also that the symptoms of œdema of the glottis are sometimes added to the preceding ones; the oppression is greater, the respiration whistling, inspiration is painful and more difficult than expiration, and attacks of suffocation supervene which may carry off the patients. In other cases, we observe all the signs of a rapidly fatal asphyxia, as, for instance, when a fragment of cartilage becomes introduced into the air-passages.

Besides these different phenomena, there exists sometimes a greater or less difficulty of swallowing resulting either from the narrowing of the lower part of the pharynx by the enlarged larynx, or from the spasmodic irritation of the muscles of that organ, or else from the change in the epiglottis. It should be known however that, according to the experiments of Magendie, the destruction of this covering does not always sensibly impede the passage of food into the stomach. This at least is what is proved once more by the following case:—

Very advanced cachexia, syphilitic ulcerations, destruction of the epiglottis.

Obs. XLII.—Josephine M., æt. 35, charwoman, entered the Beaujon Hospital, October 6th, 1856, in a state of weakness and marasmus which rendered her almost unable to speak. This patient, whose skin was slightly puffed, presented a complete discoloration of the integuments. She had been suffering from diarrhoea for some days; on the lower lip was seen a deep ulcer, with perpendicular edges, and near the tip of the tongue was another ulcer, larger and not so deep, with a greyish, sanious floor. She had cough rarely followed by expectoration, extreme difficulty of breathing, resonance of chest on percussion, indistinct vesicular murmur, and some râles at the base of the lung. There were no accessions of suffocation, but a marked change in the voice.

In spite of considerable effort, the patient could scarcely make herself heard; swallowing was easy, but attacks of cough sometimes supervened which appeared to result from the passage of foreign substances into the larynx. She was ordered protoiodide of mercury with opium, and cauterisation with the acid nitrate of mercury. Under the influence of this treatment, great improvement was observed in the state of the ulcers upon the lip and tongue, which showed a tendency to cicatrise. Nevertheless, the weakness resulting from the advanced state of cachexia and the difficulty of breathing rendering the condition of the patient always more alarming, death ensued on the 14th of October.

Post-mortem examination.—The ulcers of the mouth were in the process of cicatrization, the epiglottis had entirely disappeared, and it was

with difficulty that some greyish or whitish gangrenous detritus were discovered at the point which it had normally occupied; one of these was turned back and rested upon the anterior surface of the pharynx. The aryteno-epiglottidean folds, which were partly destroyed, were not oedematous; the superior vocal cords were also partly destroyed, the inferior were intact. The other organs were, unfortunately, not examined.

The course of syphilitic affections of the larynx is slow, continuous, progressive, but also susceptible of becoming rapidly very acute in consequence of complications which may supervene, and especially of oedema of the glottis. In most of these affections, three periods are recognisable, particularly in those which are the effect of a gummy deposit: a period of formation, a period of ulceration, and a period of reparation, each of which has its special phenomena. The duration of these affections varies with the extent and depth of the organic lesion; but sometimes there are derangements which persist indefinitely.

The termination may be favourable when the mucous membrane alone is affected or the absorption of the syphilitic deposits is facilitated sufficiently early by specific treatment. Too often, this termination only takes place at the cost of complete aphonia, the consequence of the destruction of the cartilages, of the inferior vocal cords, or of a greater or less contraction of the larynx. In addition to the evil of being followed by a cicatrix which always produces manifest narrowing, the perichondritis presents this other danger that it may become the starting-point of oedema of the glottis, a serious complication often followed by death. But what is most to be feared in such cases is necrosis of the cartilages, a dangerous affection capable of causing instantaneous death, when a sequestrum becomes entangled in the air-passages (obs. Labbé). Death is not only the consequence of a rapid asphyxia, but sometimes follows a slow asphyxia, or may be occasioned by the concomitant lesions of the viscera and the cachexia which accompanies them. Lastly, the profuse purulent secretion which proceeds from the ulcers is a cause of gradual weakening which terminates in consumption. The patients then succumb as if they had been affected with laryngeal phthisis. In a case of perichondritis with necrosis of the cartilages which we had an opportunity of observing, death was caused by the existence of metastatic gangrenous deposits in the organs, which deposits had for their starting-point gangrene developed around the necrosed cartilages.

Diagnosis.—By the account of the best authors on the subject, the syphilitic changes in the larynx examined with the laryngoscope have no distinctly marked specific character, and consequently the functional derangements which they produce also do not present any special characters. In general, however, it is from the superior to the inferior parts that, unlike tubercular or scrofulous lesions, the laryngeal manifestations of tertiary syphilis develop themselves. The individuals affected with them have the voice more or less changed; they usually suffer during the act of swallowing, or from pressure made upon the larynx. They are most frequently, at the same time, the subjects of ulcers, or at the very least of cicatrices, having for their seat the tonsils, the velum palati, or its pillars, the base of the tongue, or the posterior wall of the pharynx, and even if these various lesions be wanting, the persistence of an affection of the larynx without a determinate cause should excite a suspicion of syphilis. The diagnosis, in such a case, will be facilitated also by the antecedents of the patient. The absence of any pulmonary lesion at the apices of the lungs is another circumstance by which we may profit for our diagnosis, as it may serve to eliminate tuberculosis.

Prognosis.—Syphilitic laryngopathies may become cured completely so long as there is neither ulceration nor necrosis of the cartilages. It is rare however, even then, for the voice not to become changed. The prognosis becomes serious, on the contrary, whenever there are deep ulcerations. The patients, under these circumstances, are not only in danger of losing their voices definitely and more or less completely, but are threatened with more or less rapid asphyxia. Nor is this all, for deep-seated ulcerations of the larynx keep up a suppuration which exhausts the patients and may even become a source of infection, or, if the physician be fortunate enough to obtain cicatrization, the cicatricial tissue gradually occasions a narrowing of the calibre of the organ which, in certain cases, may necessitate an operation, and most frequently tracheotomy. We saw this in a woman under the care of Piorry, upon whom Maisonneuve performed that operation.

§ 2. *Syphilitic affections of the trachea and bronchi.*

Morgagni, Epist. 44, No. 15; Epist. 58. *Benj. Bell*, Treatise on venereal gonorrhœa and the venereal disease. Two cases of asthma observed in syphilitics and cured by mercurials, and which were very probably nothing

else than cases of tracheal or bronchial affections. *Dittrich*, *Prager Vierteljahrschrift*, 1849, Bd. i. p. 269. *Worthington*, *Medico-Chirurg. Transact.* t. xxv., et thèse de Charnal. *Saint-Arromann*, *Des gommes du tissu cellulaire et des muscles*. Thèse de Paris, 1858, p. 17. *Moissenet*, *Union médicale de Paris*, October 28th, 1858. *Vigla*, *Bulletin de la Société médicale des hôpitaux*, xiv. No. 3. p. 223; et *Union médicale*, February 19th, 1859. *Charnal*, *Quelques considérations sur les rétrécissements cicatriciels de la trachée*. Thèse de Paris, 1859. *H. Bourdon*, *Des rétrécissements de la trachée-artère*, *Union médicale*, nouv. série, t. xxi. p. 150, 1864; et *Gaz. des hôpitaux*, 12, 1864. *Moissenet*, *Union médicale*, nouv. série, t. xxi. p. 340, 1864; et *Gaz. des hôpitaux*, 33. *Forster*, *Rétrécissement de la trachée par une cicatrice syphilitique*, in *Handbuch der patholog. Anatomie*, p. 113. Leipzig, 1862. *Wagner*, *Archiv der Heilkunde*, Heft 3, 1863, p. 221. *E. Vidal*, *Union médicale*, nouv. série, t. xxiii. p. 77, 1864. *Boeckel*, *Rétrécissements syphilitiques de la trachée*, *Bulletin de la Société de chirurgie*, 1864; et *Gaz. des hôpitaux*, iii. 1864. *Lancereaux* *Gaz. hebdomadaire*, 1864.

It is possible, up to a certain point, to find in old authors, and especially in Morgagni, cases analogous to those of which we are about to make use. But we cannot do better, in this respect, than refer the reader to the excellent inaugural dissertation of J. B. Cayol,* in which are to be found collected most of the cases of tracheal ulcerations formerly known.

ANATOMICAL STUDY.

Trachea.—In an anatomical point of view, the syphilitic affections of the trachea have the greatest analogy with the lesions of the larynx, which is, moreover, easily explainable by a certain conformity of structure.

The lower part of the trachea is their most frequent seat; in seven cases in which the origin of the change was evident, this was met with five times† on the level of the last rings of the trachea, from which it was prolonged into one or other of the bronchi. I two cases in which the post-mortem examination was not made, but in which tracheotomy was performed without affording relief to the patient,‡ there is reason to think that the morbid lesion could not have had any other seat. Twice,§ however, it has been observed in

* *Recherches sur la phthisie trachéale*. Thèse de Paris, 1810.

† Observ. by Moissenet, Vigla, Virchow, Wilks and Lancereaux (Obs. XXII.).

‡ Cases by Trousseau and Bourdon.

§ Case by Worthington, second case by Wilks.

the upper part of the trachea, immediately beneath the cricoid cartilage. Whatever their primary seat may be, the tertiary changes in the trachea appear to develop themselves first in the sub-mucous tissue rather than in the thickness of the mucous membrane itself. The cases already known enable us, in fact, to follow their successive phases. In a certain number of cases, there has been observed a more or less extensive thickening of the sub-mucous tissue (diffuse change); at other times it is a circumscribed, local lesion, a rounded tumour which may justly be compared to a gummy tumour.

In a case of syphilis with gummy tumour of the liver and lungs, Wilks found the sub-mucous tissue of the trachea much thickened by recent, fibrinous (gummy) deposits, analogous to chancreous induration. The deposits which occupy the seats mentioned above are, in general, indistinctly circumscribed; the small tumours are, on the contrary, sharply limited. They are of the size of a lentil or a pea, or may attain the dimensions of a half-franc piece. In Moissenet's case, there existed, $\frac{1}{4}$ of an inch above the contraction, three irregularly rounded patches of the size of a half-franc piece, slightly raised above the surrounding surface, of a pale yellow colour, of a soft consistence at the centre, and with an uneven, mammillated surface. Such is the first stage of the syphilitic change in the trachea. Not causing death of itself, we can understand that it rarely presents itself to the eye of the observer. But, it will be said, the ulcerations and contractions of the trachea do not always present this mode of evolution, or at least they do not all pass through this first stage. Our answer to this is that it is possible to verify, in one and the same case, these various phases of change (obs. Moissenet).

More frequently, ulcerations have been observed; these ulcerations, rounded and of greater or less depth, have their floor formed by the cartilaginous rings, or by the surrounding tissues when these rings have been completely destroyed by ulceration. In a case seen by us, the floor of the ulcer was formed by a fibrous stratum containing in its thickness one or more lymphatic glands (Obs. XXII. Vol. I. p. 251).

The cicatrices which follow characterise the third phase in the evolution of the morbid process: it is frequently the only lesion observed at the post-mortem examination. Consisting of a whitish or pink tissue in the midst of which are found the cartilaginous rings more or less changed and broken up, these folded or radiating cica-

trices, in the form of bridges, occupy a part or the whole of the circumference of the trachea ; they take, in certain cases, the place of several cartilaginous rings. Hence the possibility of the collapsing of the walls of the trachea during inspiration. But the great evil of this change is, to contract the air-passage and, sometimes, to diminish its length. This, as has been observed in some cases, may occur to such an extent that it is scarcely possible to introduce a female sound or even a quill. As regards the shortening of the tracheal tube, this sometimes attains an extent of several centimeters. Let us point out, lastly, as a secondary consequence, the dilatation of this tube above and below the contracted portion and the hypertrophy of the longitudinal elastic fibres (Charnal).

Bronchi.—The various changes which we have just described are met with also, in their successive phases, on the surface or in the thickness of the bronchial tubes, but chiefly in their principal divisions. Small gummy nodules have been observed by Wagner in the thickness of the walls of the bronchi. In a case given by Dittrich, there existed beneath the bifurcation of the large bronchi deep ulcerations an inch in diameter, covered with a purulent exudation ; the surrounding sub-mucous tissue and the wall of the right bronchus were thickened and lardaceous. Several of the cases related by Virchow make mention of the existence of hard, wrinkled cicatrices on the surface of the bronchial tubes, an arrangement met with in one of our own observations. Like the cicatrices of the trachea, those of the bronchi give rise to a more or less considerable degree of contraction. But side by side with this contraction, we generally observe the dilatation of the air-tube ; this is a circumstance which we ourselves have noticed on several occasions. Usually, when the bronchial ramifications are affected, the parenchyma of the lung is at the same time changed by fibrous deposits which render it indurated and occasion a retraction altogether peculiar. It is to be remarked that never, in any of the cases quoted, was there any tubercular change in the lungs.

To sum up, we find again here the same anatomical forms as we have already studied, and as the changes in question have manifested themselves sometimes soon after the secondary period, sometimes ten or twelve years later, it would perhaps be possible to find in this circumstance a sufficient reason for comparing the one set to tardy syphilitic eruptions, the other to gummy deposits. This view appears justified, moreover, by the fact that the ulcerations were more

numerous whenever the manifestation supervened soon after the secondary period. The following case is a good example of the morbid determinations of syphilis in the air-tubes.

Ulcerative syphilitic bronchitis.

A young man had contracted, while travelling, syphilis for which he took mercury, but in an irregular and inefficient manner. In the autumn of 1838, he was attacked by disease of the throat, with hoarseness, ulceration of the velum palati, a copper-coloured eruption on the skin, nodes, nocturnal pains, and profuse sweating. His condition gradually got worse and, in the month of August, 1839, the patient, who was confined to his bed, was excessively weak and emaciated; he had frequent and very troublesome cough, copious purulent expectoration, and symptoms which left no doubt as to the existence of some disease of the larynx. His chest was perfectly resonant, but a thick, mucous rhonchus was plainly heard throughout both lungs. He was ordered quinine and iodide of potassium, but sank completely exhausted, September 15th.

Small ulcerations existed on the mucous membrane covering the larynx; there were none in the trachea, but beneath the bifurcation they appeared afresh, becoming more and more numerous in the smaller ramifications. In the smallest divisions of the bronchi there was a continuous series of ulcerations; isolated ulcers had apparently run into each other. The bronchi were filled with purulent matter, and the lower lobes of the lungs were slightly congested.*

SYMPTOMATIC STUDY.

The preceding study already enables us to understand that the symptoms which correspond to the syphilitic lesions of the trachea must vary according to the stage of the anatomical evolution, and this appears really to be the case.

The commencement of the affection, generally insidious, attracts very little attention from the patients; they scarcely notice a slight difficulty of breathing, they cough little, but they have a sensation of slight tickling, as if by a foreign body at some point of the air-passages, and chiefly towards the upper part of the sternum. To these symptoms are sometimes added loud, whistling inspiration, oppression on going upstairs, and fits of suffocation recurring more particularly at night and accompanied by cough without expectoration (Bourdon's case). Later on, probably when one or more ulcers exist, the cough is more frequent; dry up to that time, it is now

* Sadowski, of Prague, quoted by G. Lagneau. Thèse de Paris, 1851.

followed by muco-purulent expectoration sometimes streaked with blood (Vigla's case), or by greenish yellow nummular expectoration (Bourdon's case). The voice is little changed and auscultation reveals no abnormal sound. The derangements of respiration may persist, but are sometimes seen to diminish, especially when an appropriate treatment has been adopted (Bourdon's case). In these cases, a certain degree of improvement manifests itself, but we must take care not always to regard this as the commencement of a definite recovery. It is, in fact, only a period of arrest, during which cicatrization takes place. This once effected, the lesions often reappear in proportion to the amount of contraction of the cicatricial tissue, and this time derangements more marked, more serious, and more permanent supervene and are, at the same time, less accessible to internal means. The dyspnoea, which is felt afresh, is progressive; the cough is capricious and the whistling inspiration so marked as to constitute a true roaring. But the most important phenomenon and, at the same time, the most distressing to the patients, consists in accessions of suffocation which often occur without any very appreciable cause. These accessions, in the intervals of which more or less oppression continues, are usually renewed to an extent to place the life of the patient in danger. At this same period, we observe, moreover, in certain cases, two symptoms to which Demarquay justly attaches great importance, viz., the sinking of the larynx and the immobility of that organ during deglutition and during speech.

Such are, to sum up, the chief functional derangements which belong to the syphilitic changes in the trachea. To these derangements let us add an altogether peculiar sensation of hardness of the trachea, a diminished mobility of that organ upon the surrounding tissues, and lastly, the possibility of seeing, by the aid of the laryngoscope, either the ulcerations, or the contraction itself. It is thus that in a case of contraction of the trachea situated, it is true, at a high point in the air-passage, Turck was enabled to form a perfectly positive diagnosis; for he ascertained, at the moment in which his patient uttered a piercing cry upon a very high note, that the sound was produced during expiration by the vibration of the whole length of the edges of the contraction, which played the part of the vocal cords, these remaining perfectly motionless and gaping widely.

When the syphilitic change involves only the bronchial tubes, the symptoms differ somewhat from those which we have just been

analysing. According to W. Munk,* these symptoms do not appear, in general, until after the affections of the throat, and as if the disease reached the larynx, then the trachea, and lastly the bronchi. In the earlier periods, the phenomena are almost the same as those of simple catarrh; but the voice is more changed, and there are in the larynx a constant dryness and irritation which gradually reach the chest, the patients experience a sensation of painful constriction behind the sternum, and most frequently the irritation, continuing, causes a short and frequent cough, a symptom which has given rise to a suspicion of the existence of tubercular phthisis. When the disease has continued some time, the mucous secretion furnished by the air-passages does not fail to present the characters of suppuration; it is then that hectic fever sets in, if it did not exist already. Thus, dyspnoea more or less intense, a cough which is usually capricious, and mucous or purulent expectoration: such are the evidently little characteristic symptoms of the tertiary change in the bronchi. Let us insist upon the circumstance that this change, itself always rare, is not accompanied, in general, by any of the physical signs which indicate an extensive induration of the lungs.

Course, duration, and termination.—In the preceding description, we have sufficiently made known the course of the pathological process to render it unnecessary to revert to that point. Its evolution is slow, its duration, which is in general of several months, is less long however, on account of the functional importance of the organ affected, than that of most of the other syphilitic manifestations in the viscera.

As regards its termination, this is rarely favourable, which appears to result from the difficulty of recognising the change at its onset and of treating it sufficiently early. Death, when it is a question of lesions of the trachea, is, therefore, comparatively frequent. It generally supervenes in a fit of suffocation, more rarely from general exhaustion. Cachexia is a rather rare consequence of the syphilitic affections of the trachea and larynx, unless they coexist with changes in the abdominal viscera.

Diagnosis.—Dyspnoea, a peculiar whistling sound during inspiration, genuine roaring, the voice retaining almost its usual tone, pain or the sensation of a foreign body at some point in the air-tube, and

* See *London Medical Gaz.*, April, 1841, and *Gaz. méd. de Paris*, p. 661, 1841.

later on accessions of suffocation without appreciable pulmonary cause: such are the signs which must serve as the basis for the diagnosis of the syphilitic affections of the trachea, and to which may doubtless be added some symptoms furnished by the auscultation of the trachea, hitherto perhaps too much neglected in such cases. These affections will not be confounded with the changes in the larynx, which generally occasion more or less considerable modifications of the voice; but they might be confounded with certain lesions of the trachea which produce contraction of the air-tube. The absence of any symptoms of pulmonary tuberculation will be of great use in rejecting the idea of the existence of an anatomical change in the trachea of tubercular origin. There is one disease however which, as has been very well shown by Professor Tardieu,* is capable of producing lesions closely resembling those of syphilis, viz., glanders. In such cases, the diagnosis must rest, above all, upon the antecedents and commemoratives of the patient; but it is unnecessary to insist upon this point here, for we purpose comparing these two diseases with each other further on. Tumours which compress the trachea cause evils which might lead to error; amongst these tumours, aneurism of the aorta, one of the most frequent, is recognised by symptoms altogether peculiar to it. As regards the solid tumours of the anterior mediastinum, as they soon project beyond the upper edge of the sternum, they usually become appreciable to the touch. Other lesions also are important to know, as they too may lead to error: epithelial cancer of the œsophagus is amongst this number. This change, of which I have had the opportunity of seeing several examples,† sometimes perforates the trachea, projects into its cavity, and contracts, more or less, its calibre. Hence dyspnœa, tracheal whistling, accessions of suffocation, all symptoms which may lead to the idea of a syphilitic contraction in the trachea. The difficulty of swallowing, and sometimes also the change in the voice which results from the invasion of one of the laryngeal nerves by the epithelial product, are signs which, in combination with the commemoratives, will serve to clear up the diagnosis in these difficult cases. The commemoratives of the patient, the absence of symptoms

* Tardieu, *De la morve et du farcin chroniques chez l'homme*, &c. Thèse de Paris, 1843.

† Lancereaux, *Deux cas de cancer épithélial de l'œsophage* (*Bull. de la Société anat.*, 1861).

indicative of the existence of pulmonary tuberculation, and the long duration of the evil, are so many circumstances which will aid in recognising the syphilitic bronchopathy.

Prognosis.—The prognosis of the syphilitic affections in question is unfavourable whenever the change occupies a large extent and occasions a notable contraction of the trachea or large bronchi. Cicatricial contraction is the most serious, for all specific medication is then useless.

§ 3. *Syphilitic affections of the lungs.*

Nicolas Massa points to asthma and diarrhoea as symptoms consecutive to gummy tumours, *Aphrodisiacus*, p. 45. *Portal*, Observations sur le traitement de la phthisie pulmonaire. Paris, 1792. *J. Frank*, Traité de pathologie interne, t. iv. p. 267, chap. iv. 27, trad. Bayle. *William Munk*, *Med. Gaz.*, April and May, 1841. *A. Dumoulin*, Thèse de Paris, 1848, p. 40. *Lagneau*, Des maladies pulmonaires causées ou influencées par la syphilis, 1851. Thèse de Paris. *Ricord*, Iconographie, pls. 28 and 28 bis. *Budd*, Diseases of the liver, p. 419. London, 1857. *Spencer Wells*, *Med. Times*, July 3rd, 1858. *S. Wilks*, Transact. of the Path. Society of London. Guy's Hospital Reports, 3rd series, Vol. IX., p. 34. *Cornil*, Bull. de la Soc. anat., 1861, et *Pihan Dufeillay*, *ibid.* *Hutchinson and Jackson*, *Med. Times and Gaz.*, October 11th, 1862. *E. Wagner*, Archiv der Heilkunde, 1863, p. 361. Leipzig. *A. de Mauz*, Maladies pulmonaires syphilitiques, Annales de la Société de médecine de Gand, January and February, 1864. *Lancereaux*, Des lésions viscérales susceptibles d'être rattachées à la syphilis constitutionnelle, *Gaz. hebdomadaire*, 1864.

The physicians of the last century were already acquainted with pulmonary syphilis; with them it was venereal phthisis (phthisis a lue venerea). Most of them described under this name an affection of the lungs caused by the venereal poison, differing from that peculiar condition which we call cachexia. *Morton*,* devoting to this form of disease, chap. vii. of his *Phthisiology*, gives a case which is not wanting in interest. *Baglivi*† writes in his *Præceps Medicæ*:—"Certò constat phthisin sæpissime esse morbum secundarium a variis morbis principalibus, *v.g.* lue venerea," &c. *Hoffmann*‡ gives two cases of venereal phthisis which he discusses and criticises.

* *R. Morton*, *Opera medica*. Lugduni, 1737, p. 107.

† *Baglivi*, *Opera medica*. Lugduni, 1745, p. 200.

‡ *F. Hoffmann*, *Opera omnia*. Geneva, 1748. De lue venerea, p. 424, t. iii. c. iv.

Morgagni * also quotes two examples of it, but thinks, and in this he inclines to Morton's view, that the venereal disease has no other action than that of favouring the development of the change in the lungs. Astruc † insists upon pulmonary symptoms connected with syphilis. Tode, Schwarze, ‡ and Meza § also admit venereal phthisis, of which they give some cases. Sauvages, || following Morton's example, makes of this disease the eighth variety of his forms of phthisis, and his view was afterwards adopted by Cullen and Macbride. Schroeder ¶ says, when speaking of the venereal poison :—
 "Producit inflammationes, spasmos, tumores et tubercula, in variis partibus nec non raro in pulmonibus." J. P. Frank ** names the action of the syphilitic poison upon the lungs amongst the causes of hæmoptysis. De Horne, †† Carrère, †‡ and Tandon §§ have seen serious affections of the lungs become cured under the influence of a specific treatment. Swediaur ||| and Saucerotte ¶¶ speak of syphilitic pulmonary phthisis. Portal *** treats of it at considerable length. Joseph Frank ††† recognises three periods in it. Petit-Radel ††† gives some cases of it which he takes from

* Morgagni, *De Sedibus et causis morborum*, t. ii. epist. xxii. arta. 10, 11, and 15; t. i. p. 525, trad. franç. (*Encyclop. des sciences médic.*).

† Astruc, *De morbis venereis*, in 4to, t. i. p. 425.

‡ Schwartz, *Dissertatio observationes quasdam continens*.

§ Meza, *Societatis Havniensis Collectanea*, 1774, Vol. I. art. 21.

|| Sauvages, *Nosologie méthodique*, trad. Nicolas, 1775, t. iii. p. 457. *Nosologia methodica*. Amsterdam, 1768, t. ii. p. 457.

¶ Th. G. Schroeder, *Tractatus medicus de pleumonia ejusque speciebus*. Gottingen, 1779, art. De Pleumon. Syphilit., p. 70.

** J. P. Frank, *Médecine pratique*, t. ii. p. 308, trad. Goudareau. Paris, 1842.

†† De Horne, *Differentes méthodes d'administrer le mercure*, t. ii. p. 447, 1779.

†‡ Carrère, *Maladies vénériennes chroniques, sans signes évidents*, pp. 64 and 181, Obs. V.

§§ Tandon, *Traitement et guérison d'une phthisie vénér. par la méthode de Huguenot* (*Ann. de la Soc. méd. de Montpellier*, t. i. p. 176).

||| Swediaur, *Maladies vénériennes*, 4^{me} édit., t. ii. p. 169, 1801.

¶¶ Saucerotte, *Journal de méd. de Corvisart*, 1812, p. 750.

*** Portal, *Observat. sur le traitement de la phthisie pulmonaire*. Paris, 1809.

††† J. Frank, *Traité de pathologie interne*, t. iv. p. 167, ch. iv., trad. Bayle.

††† Petit-Radel, *Cours des maladies syphilitiques*, t. ii. p. 3. Paris, 1812.

Larrey. On this subject Van der Kolk expresses himself as follows: * "Etenim non raro in perscrutando cadavera syphiliticorum, qui dum vivebant phthisici videbantur, inveni in pulmonibus, præcipue in medio lobo, ulcus quoddam seu pus collectum sine ullo tuberculo cingenti." In short, without spending more time upon the various facts further contained in scientific records, let us mention, as an instance of the agreement between the earlier observations and modern researches, the work of Munk † upon the specific diseases of the lungs and the inaugural thesis of G. Lagneau. ‡

Two doctrines have hitherto been advanced, of which the one considers certain pulmonary diseases as produced directly by syphilis, while the other regards syphilis as a simple occasional cause of those diseases. We shall see further on what is to be thought of this latter opinion. However this may be, and if it be far from improbable that a certain number of cases of venereal phthisis published by the earlier writers referred to changes in the trachea or bronchi, it is none the less true that at the present day no doubt can be retained of a direct influence of syphilis upon the parenchyma of the lungs. Diffused or circumscribed, the lesions resulting from it leave behind them cicatrices, and consequently assume the anatomical types peculiar to the other organs.

ANATOMICAL STUDY.

Diffused form.—Interstitial pneumonia.—The facts upon which rests the evidence of this anatomical modality of pulmonary syphilis are, as yet, few in number, but sufficient however to leave no doubt in the mind. The seat of this modification is variable: sometimes it occupies the upper or middle lobes, sometimes it is confined to the lower lobes, and thus it is reasonable to believe that it may invade almost indiscriminately the different parts of the lungs, but without attaining any considerable extent. The portion of parenchyma affected is harder, firmer, elastic, resistant to pressure, friable, and impermeable by air, and, consequently, does not crepitate. Situated near the surface of the lungs, the change is sometimes marked at its commencement by a protuberance, and later on by a greater

* Van der Kolk, *Observ. anatomo-patholog.*, 1826, p. 129 et seq.

† *London Med. Gaz.*, April and May, 1841.

‡ Lagneau, *Des maladies pulm. causées ou influencées par la syphilis*. Paris, 1851.

or less amount of depression, the result of the retraction of the newly formed tissue. In a case related, by Vidal, there existed around the bronchi an indurated mass of a bluish grey colour, which had a certain analogy to green sea marble. This mass, which took the place of a portion of the parenchyma of the lung, presented on pressure a resistance such that it might have been taken for a periostosis. It had for its seat a portion of the lower lobes. The rest of the lung was supple and soft to the touch. Nowhere could the least trace of tubercles be found. Wilks mentions having seen induration of the pulmonary tissue in a certain number of cases of venereal disease, but hesitates to connect this lesion with syphilis.

In a case observed by ourselves, the lesion occupied the lower part of the upper lobe of the left lung. In this neighbourhood, the surface of the lung presented a large depression with radiating folds; the parenchyma was replaced by a firm, resistant, fibrous tissue, in the midst of which were seen numerous yellowish points, with a slightly granular surface, formed, on microscopical examination, of granular nuclei and numerous molecular granulations contained in a fibrous web. The bronchi which entered this portion of the lung, for the most part dilated or contracted, terminated, some of them at least, in enlarged culs-de-sac. Their opaque walls, yellowish and thickened, were manifestly changed. Far from being rare, this change in the bronchi is rather the rule in cases such as those of which we are speaking.

Gummy tumours of the lungs.—The gummy tumours of the parenchyma of the lung, which were mentioned by Morton, Astruc,* and Fabre, have only really been studied in recent times, and, to tell the truth, the knowledge we possess of them is, even now, very imperfect. The cases, ten in number,† which we have been able to collate in adults, have taught us that the gummy tumours observed in the lungs of adults have no favourite seat, but are met with indiscriminately in the upper, middle, and lower lobes. However, when they occupy the upper lobe, it is rather the middle or lower part of it than the apex which is the favourite seat of tubercles.

These deposits vary in number, and although there may sometimes

* Astruc admits that the vital functions of the lung may be affected in syphilis: 1st, by tubercles or gummy tumours, whether suppurating or not; 2nd, by vomices.

† The authors of these cases are: Ricord, Budd, Dumoulin, Wilks, Spencer Wells, Cornil, Lancereaux, Hutchinson, and Jackson.

be only one, they are most frequently multiple; they rarely exceed six or eight. They show themselves in the form of greyish, or yellowish white tumours, scarcely irregular, rounded, of the size of a pea, an almond, or a large nut, of a consistence firm at first, slightly elastic, later on somewhat soft, and cheesy at the centre. Deposited in the midst of the parenchymatous web, these tumours are generally circumscribed by an indurated tissue, which is fibrous and greyish (Obs. XLIII.), or pearly and shining (obs. Cornil); this serves them as a shell and is not without importance in a diagnostic point of view. On section, this shell, or, better, this zone, is perfectly distinct from the central nodule, and while, resistant under the finger and evidently traversed by numerous vessels, it is formed of a fibrous tissue thoroughly developed, the latter is friable, little or not at all vascular, formed of scanty nuclear or cellular elements, more or less granular, and forming a part of the group of elements of conjunctive tissue. A dry product at first, gummy tumours of the lungs soon became necrosed and undergo the granulo-fatty metamorphosis. Then it is that a change of consistence gradually takes place, and that the substance of new formation, primarily solid, becomes softened from the centre towards the periphery (obs. Wilks).

Having reached this period, the substance in question may be partly or entirely absorbed; but most frequently it is thrown off through the bronchi and in its place remains a cavity of greater or less extent, lined with caseous deposits and always circumscribed by a more or less thick, fibrous zone. The process by means of which this elimination is effected is little known; but there is every reason to believe that it does not differ from that which obtains when elimination of gummy tumours of the sub-cutaneous cellular tissue (ulcerative inflammation) takes place. The cavities, as is the case with these latter lesions, are susceptible of cicatrisation; whence puckering, depressions more or less manifest, cicatrices in short, upon the surface of the lungs.

Cicatrices.—For a long time, all cicatrices of the lungs were attributed almost exclusively to tuberculisation; it may fairly be assumed, therefore, that relics of change of tubercular origin and syphilitic origin may have been confounded with each other. A certain number of cases given by Laennec,* Andral,† and some

* *Traité de l'auscultation*, p. 58. Paris, 1831. See Obs. XIX. and XX.

† *Clinique médicale*, t. v. p. 68. Paris.

other authors, would seem at least to give some appearance of truth to this view. In fact, although no mention is made of the existence of syphilis in most of the cases related by those authors, there is nevertheless reason to believe, on account especially of the concomitant changes in the liver (see Obs. XIX. and XX. of Laennec) that the cicatricial lesion of the lung might well have had syphilis for its cause. However this may be, we think, to judge from the cases observed by ourselves, and this opinion is shared by the illustrious anatomo-pathologist of Berlin, that we should restrict considerably, in the lungs, the changes attributed to veritable tuberculation, and that many callous and slate-coloured cicatrices, many caseous indurations do not result from a cured tubercle, but much rather from a gummy tumour modified by the fact of its evolution. The frequency of cicatrices of the lungs in cases of visceral syphilis* come at least in support of this view.

Syphilitic cicatrices of the lungs are observed equally in each of the lobes, either on their surface or in their substance. They co-exist with various syphilitic lesions occupying different points of the body or even of organs such as the liver, but never or rarely with true tubercles of the lungs. They are generally extensive, deep, radiating or star-shaped, and composed of a fibrous and indurated tissue, in the midst of which is sometimes seen a dry, granular, yellowish substance. In one of our observations they are described as follows:—"Cicatrices, some radiating, others star-shaped, occupy each lobe of the right lung; and in the vicinity of them, the greyish, firm, indurated pulmonary tissue presents, towards the centre of the points of induration, a white and caseous substance. Some analogous cicatricial depressions exist on the surface of the left lung. That organ adheres to the diaphragm, which is also the seat of cicatrices and of small gummy tumours."

The adhesions of the lungs to the costal parietes are not rare in these cases, in which the pleura, generally thickened, participates in the change, so that it is possible to predict that a chronic and dry membranous *pleurisy* is, so to speak, a necessary concomitant of the diffused or circumscribed syphilitic lesions of the parenchyma of the lung. Much more rare in cases of tuberculosis, this form of pleurisy is almost an exception when there is cancer of the lungs.

Such are, after the most rigorous analysis we could make, the

* See our observations.

changes which take place under the influence of syphilitic disease, and develop themselves in the parenchyma of the lungs. But how are they to be recognised, and what is their specific power? The diffused change, chronic interstitial pneumonia, is distinguished by its slight extent, rarely invading a whole lobe, and is sometimes met with at disseminated points: moreover, the neoplasm of which it consists presents itself in the shape of thick, fibrous septa, between which is interposed a yellowish, granular substance, to a certain extent different to the marbled substance, hard and brilliant on section, which belongs to ordinary chronic pneumonia, that is to say, to the pneumonia to which it is not yet possible to attribute any very determinate cause.

Gummy tumours of the lungs, dry products with little vascularity, are especially distinguished by the presence round about them of a fibrous zone which is generally very thick. Tubercles, when they take on the form of rounded masses, may cause confusion; but generally, even under such circumstances, it is rare not to meet with tubercular granulations, which does not occur in the case of specific deposits; moreover, tubercular neoplasms develop themselves most frequently on both sides of the chest, and have for their favourite seat the apices of the lungs. Almost entirely devoid of vascularity, and consisting of the elements of conjunctive tissue, these two products have not, however, an identical evolution. Less rapid in its development, the gummy tumour is susceptible of a more complete organisation, and there are often found in it fibres of conjunctive tissue, an element always rare in tubercle, which is usually formed of nuclei atrophied, granular, deformed, and smaller than those proper to gummy tumours. The large granular cells (granular corpuscles) are not met with in the tubercular deposit as they are in the syphilitic deposits. The tubercular neoplasm is drier, less fatty, less developed, to a certain extent, than the gummy neoplasm, and, consequently, enjoying a lower vitality, has a greater tendency towards a retrograde transformation.

SYMPTOMATIC STUDY.

The changes we have just been studying sometimes escape our means of physical investigation, and, as they do not always give rise to very appreciable functional derangements, it follows that they may pass unperceived and remain latent, at least for a certain time.

This is, in fact, what happens in some cases of partial chronic pneumonia, and of gummy tumours in the first period of their evolution. It is easy to conceive the difficulty of discovering these lesions while they are of slight extent; on the other hand, dulness on percussion and a circumscribed murmur, alone or accompanied by râles, are the chief symptoms which present themselves on rare occasions.

At a more advanced period, when dilatation of the bronchi has been added to the chronic pneumonia, the murmur, become more appreciable, coexists with larger or smaller râles; but, after all, the physical signs peculiar to gummy lesions of the lungs do not manifest themselves until after the breaking up of these new products, when they have produced in the thickness of the parenchyma of the lung one or more excavations of variable extent, for, from that moment, the morbid phenomena change their character. To this phase refers, no doubt, the mention made by Astruc and some other authors of the last century of vomitæ consequent upon the presence of suppurating gummy tumours and of abscesses in the lungs. In any case, from that moment, new stethoscopic signs show themselves which do not differ from those which are observed whenever any cavity exists in the lungs: a hollow murmur, confined to a particular region, and râles more or less large, with or without vocal resonance, constitute these signs.

A cough more or less obstinate, sometimes capricious, dyspnœa, oppression, and muco-purulent expectoration: such are the chief functional derangements. Let us add that hæmoptysis has also frequently been seen to supervene (obs. Leudet and Obs. XLIII.). But these phenomena do not present, so far, any specific characters, and yet it is presumable enough that a micrographic examination of the matter expectorated would present something peculiar. Independently of any febrile condition, these various symptoms most usually coexist with that deep-seated modification of the organism known under the name of cachexia, and it is to be remarked that this general disturbance of the organism sometimes persists even when the changes recognisable in the stethoscopic signs authorise the supposition that cicatrization of the cavities and a cure of the pulmonary affection have taken place.

Course, duration, termination.—The course of the syphilitic changes in the lungs has nothing peculiar in it, apart from the possible elimination of the gummy tumours. These tumours present the three phases of crudeness, softening, elimination and cica-

trisation already pointed out for gummy tumours of the other organs, and to each of these phases correspond, necessarily, different stethoscopic signs. The duration of these affections is of several months. Their termination is most frequently favourable, when they are recognised sufficiently early; it would be less unfavourable if, at this period of syphilis, the lesions of the abdominal viscera did not commonly occasion cachexia and marasmus.

Diagnosis.—The various symptoms of which we have been speaking not having, as we have already stated, any pathognomic character, it follows therefrom that the diagnosis of syphilis of the lungs rests chiefly upon the antecedents and commemoratives of the patient, and upon the nature of the concomitant affections. However, certain pulmonary derangements may serve to clear up the diagnosis and to put us on the trace of syphilis. Thus a certain degree of dulness, with a blowing sound not preceded by febrile reaction, persistent and limited to one of the lower lobes or to the middle lobe, in a cachectic individual the apices of whose lungs are intact and the liver diseased: such are the signs required for the diagnosis of the existence of a syphilitic affection of the lungs. The sudden appearance of abundant expectoration, the seat of the change in a limited extent, and especially on one side only of the chest, are circumstances which constitute a further presumption in favour of this same affection (see observations below).

The tubercular change in the respiratory organs, which it is above all others easy to confound with the cases in which we are interested, is distinguished moreover not only by a more rapid evolution and greater extension, but also further by its very special onset at the apices of both lungs. Should the anatomical change occupy one of the apices, or even both at once, it is easy to understand that the diagnosis will be of the most difficult and require all the sagacity of an enlightened practitioner. The course of the affection, the general condition of the patient, or still more his peculiar state of cachexia, and his morbid antecedents: such are the data upon which it will still be possible to found a diagnosis which an appropriate treatment may afterwards confirm.

Prognosis.—The prognosis of pulmonary syphilis is unfavourable, not so much perhaps on account of the lesions in the lungs themselves as of the syphilitic changes which, at the same time, usually prevail in the other viscera. Without forgetting that in such cases a cure is often possible, we must not lose sight of the fact that these

changes, comparatively rare, never appear except at a very advanced period of syphilis and, consequently, at a time when the organism has already undergone a serious modification. If we bear in mind this consideration, we shall no longer be tempted, like Dr. O'Connor and some other authors, to regard as syphilitic manifestations lesions which, after all, are merely ordinary pneumonias or pleurisies.

In this article, in which we have shown ourselves as sparing as possible of details, we have based our description upon the anatomical change, the characters of which are always more precise and more certain than those furnished by the symptomatic derangements. The syphilitic phthisis and asthma described by certain authors, are not, in our opinion, anything else than symptoms connected with some of the lesions already studied and very especially with ulcerations and contraction of the air-passages. Our view of this question, which differs from that of Drs. Lagneau and de Naux, will, we hope, find imitators.

The following instances of syphilitic affections of the lungs terminating in death or recovery will serve to support what has been advanced.

Chronic syphilitic pneumonia.

V., æt. 45, sempstress, of strong constitution, entered the Clinical Hospital, April 1st, 1853, under the care of M. Pidoux, on account of great difficulty of breathing. For the last month she had experienced uneasiness and oppression, and some days ago was obliged to give up working. She pointed to her chest as the seat of her complaint; her short, anxious and difficult respiration was performed in the upper part of the chest; the base of the thorax was motionless and suggested the idea of some obstacle to the entrance of air into the lungs. Percussion fully confirmed this supposition, by giving a dull sound which was more marked, however, on the left side than on the right; there was exaggerated resonance in the upper part of the chest. Auscultation revealed bronchial respiration and a murmur in relation with the dulness at the apices of the lungs; the breathing was puerile, exaggerated and rapid, the pulsations 65. There was no heat of skin; the tongue was pink, the face slightly congested, there was no cephalalgia, the intelligence was perfect. A month ago, this woman spit a little blood for two or three days; previously to that time she had never had any chest affection; she had no expectoration, no cough, no evening fever, nor any night sweats. There was no emaciation nor any family history of phthisis. For some months past, walking and ascending stairs had caused great discomfort and palpitation. She had on her body traces of syphilitic ecthyma and rupia which gave evidence of very inveterate venereal disease. Thirteen years ago,

while suckling a child of her own, this woman consented to give the breast to a little girl who had her lips ulcerated and covered with mucous patches.

Ulcers soon appeared around the nipple of the nurse, and a physician who saw her at that time gave her a certificate to the effect that she had contracted the disease from the child. She was then subjected to mercurial treatment. The disease appeared to remain dormant for two years and then broke out again with great intensity; there appeared mucous patches, ulcers upon the legs, then rupia the indelible traces of which are still to be seen. She had osteocopic pains.

The patient then determined to undergo a fresh treatment; Van Swieten's drops and iodide of potassium, without giving much relief to her pains, contributed to the cicatrization of the ulcers.

On admission into the Clinical Hospital, she took iodide of potassium and anti-spasmodics. In the evening, there was increased dyspnoea. On the 2nd, the patient could not breathe except in a sitting posture, the apices of the lungs dilating with force; the pulsations of the heart were more violent and rapid. On the 3rd, these symptoms were still more marked; the same treatment was continued. On the 4th, the oppression was very great, the face bluish. Symptoms of asphyxia were observed, which carried off the patient at 8 P.M.

Post-mortem examination, thirty-six hours after death.—There was nothing peculiar about the heart, the brain, or the abdomen; the lungs alone were the seat of the lesions which had caused death; the trachea was filled with a frothy fluid, but its mucous membrane did not present any redness or ulceration. On making an incision posteriorly into the bronchial ramifications of the lower lobes, these were seen to be surrounded by an indurated mass of a bluish grey colour, having a certain analogy to green sea marble. This colour was deeper on the left side than on the right. This indurated mass had replaced the pulmonary parenchyma which separates the air-tubes from each other. It [presented great resistance to pressure, and might have been taken for a periostosis; the rest of the lung was soft to the touch, elastic, yielding under the finger; it was slightly reddish, though much congested. There was no trace of tubercle, either at the apex or base, or in any part of the body. The bronchial glands were black and indurated, without any tendency to supuration; the bronchial filaments of the pneumogastric nerves, on each side, entered the indurated tissue, which rendered dissection of them almost impossible (Vidal de Cassis, *Traité des maladies vénériennes*, 2^e édit., 1855).

With this case, in which the diffused form of the syphilitic change in the lungs cannot be contested, we shall compare two others already published by us in the *Gazette Hebdomadaire*. These cases, which are adapted to enlighten us concerning the most advanced phases of circumscribed lesions, will find their complement in the very interesting case given by Cornil. This case is, in fact, an ex-

cellent example of these same lesions in the first period of their development.

Probable syphilitic antecedents in the father.—Arrested development of the genital organs ; peculiar conformation of the teeth and nose.—Osteocopic pains, alopecia, angina, deafness ; absence of menstruation, hæmoptysis, signs of cavities in the lung.—Post-mortem examination.—Cavities in right lung, with pneumonia in neighbourhood of them ; cicatrices in the liver.

OBS. XLIII.—Louisa R., æt. 41, laundress, related that her father had been the subject of a severe disease which, so far as she had heard, was a syphilitic affection ; he was ill shortly before her birth, and she does not doubt that he was the cause of the various sufferings she has undergone from an early age ; she remembers that he had violent pains in one of his knees. Her mother was afflicted for seven years with pains in the legs and right arm successively ; she was afterwards seized with cholera, and finally died in 1852, after having had œdema of the lower extremities for a year. Of twelve children whom her parents had, only three survived, all the others died before the age of 3 or 4 years, but without the patient's being able to tell us what was the matter with them. As regards herself, this is what she told us : she does not know whether she had convulsions in infancy, but she relates that, from 8 to 11 years of age, she had pain in the eyes and became almost blind ; she afterwards had affections of the throat and her voice became so much changed as to be almost entirely lost. At 14, she was seized with deafness which partly disappeared, then returned and persisted. About this same period, attempts were made to produce menstruation, but in vain. At 18, she was taken with a slow fever, which gradually exhausted her. It appears that she was then advised to marry, but refused. At 22, she had intense pains in the head, with falling off of the hair. After that, until she attained her 38th year, she enjoyed tolerable health, suffering frequently from her stomach, and sometimes from vertigo, but never from convulsions or loss of consciousness. In April, 1859, she was seized with pleurisy ; she soon resumed her work, but on the 22nd of June found herself obliged to enter the hospital. She then complained of pains in the dorsal region, and some days after, had hæmoptysis ; this symptom recurred towards the end of the year and in the beginning of 1860.

To get herself treated, this interesting patient was obliged to go into several hospitals. From February 18th to June 15th, 1860, her health was pretty good, but then copious hæmoptysis supervened ; she believes that she spat up nearly a quart of blood in twenty-four hours. In October, she entered the Hospital de la Pitié, under the care of M. Marotte. It was then that I had an opportunity of examining her.

She was a woman of small stature and little development. Her breasts were like those of a young girl before the age of puberty ; the mons veneris was completely devoid of hair, the vagina scarcely allowed of the introduction of the little finger ; the hymen scarcely existed, but there were no signs of tearing. Her voice was hoarse and snuffling ; her

teeth were small and notched; her nose flattened towards the base; her head almost bald; she was pale without emaciation. Recent hæmoptysis and the vomiting of food and medicine (cod-liver oil which she takes largely) were the reasons which had induced her to come into hospital this time. She complained, further, of pain in the shoulder and right arm, and of oppression in the region of the stomach. She was so deaf that I was obliged to write my questions to obtain an answer. Examination of her ears did not reveal any change.

On examining her chest, I discovered at the upper and inner part of the breast, over an extent of several centimeters, the existence of a dull sound; in this same region and towards the axilla, was heard a soft, jerking murmur, very different to the bronchial murmur; a little lower, this murmur assumed a hollow character; from time to time, and especially during efforts to cough, or to take a deep inspiration, sub-crepitant or cavernous râles were heard. Posteriorly, the same phenomena more deeply seated. The left lung was everywhere intact. There was frequent, hacking cough, with abundant and often bloody expectoration. The heart was healthy; the spleen, the liver and the kidneys did not appear to be diseased. There was no want of intelligence, but it was easy to see that the patient had almost entirely lost the sense of smell. This condition has existed for ten years, if her account is to be believed. During that period, in fact, this patient has always remained stuffed up. She has little appetite and almost constant gastric derangements; fever at times, with paroxysms towards evening.—She was ordered a flying blister and emollient drinks.—Her condition remained the same, her appetite small, and the emaciation increased, but her face, although very pale, was full and, as it were, puffy. The months of November and December passed without change, the hæmoptysis recurred several times and the patient went out in January.

On the 9th of March, she requested me to admit her again; she was placed under the care of M. Gendrin. The emaciation has increased since she went out; the cough still continued and the expectoration was generally bloody. There existed in front, on the right side of the chest, a cavernous murmur which began to be heard at two or three fingers' breadth below the clavicle; the same murmur was heard behind over a considerable extent of surface; there was dulness on percussion at these points, and mucous râles sometimes very large. The left lung did not present anything abnormal. The liver projected beyond the edge of the ribs; the heart was intact. The fever, moderate at first, increased in intensity; some days afterwards, the appetite became null, and there was diarrhœa; the emaciation increased. The patient became more and more exhausted, fell into a state of marasmus, and succumbed March 20th, 1861.

Post-mortem examination.—The external examination of the body showed nothing remarkable except slight œdema of the lower extremities. The brain did not appear to be changed either in form or structure; the nerves arising from it were healthy. The organs of the senses could not be examined, as we were requested not to disfigure the body.

Thoracic cavity.—The left lung was intact, or merely cedematous. In the right, on the contrary, was found an ulceration which occupied all the three lobes; the upper and lower lobes, however, were not invaded in their whole extent; at its apex, the upper lobe was still somewhat crepitant, but lower down this same lobe was indurated; several cavities were found in it. Analogous cavities were met with in the middle lobe, and in the upper part of the lower lobe, separated from each other by septa which were frequently incomplete, or by fibrous bands of greater or less extent; the largest of these cavities might contain a pigeon's-egg; their walls were perfectly smooth and polished; they were situated in the midst of a greyish tissue, which was firm and resistant to pressure, and not easily either broken up or torn. Nowhere was the least trace of tubercle found, and these cavities cut out of the indurated tissue sufficiently showed, moreover, that it was not a question of tuberculisation, but one of chronic induration of the tissue of the lung.

Abdominal cavity.—The liver, larger than in the normal condition, projected beyond the false ribs; in colour it resembled a nutmeg; numerous yellow spots, slightly irregular, were seen on its surface, upon a brownish ground. Glisson's capsule, thickened in the vicinity of the suspensory ligament, adhered more or less closely to the diaphragm at several points. On the convex surface appeared deep furrows running in various directions and presenting around them a thickening of the capsule; the lips of these furrows were united by bands of conjunctive tissue; the same change was met with again on the concave surface. Fibrous bundles lined the floor of these furrows; beneath them, the parenchyma of the liver was little changed, the cells were granular and atrophied; in the rest of the liver, there were a thickening of the fibrous web and abundant fatty granulations in the interior of the cells. The spleen and thyroid body were enlarged and somewhat indurated.

The kidneys were healthy, the ovaries and uterus not more developed than in a young girl of 8 or 10 years. The ovaries, in a rudimentary state, did not contain any Graafian vesicles; the uterus was comparatively very small, the mons veneris extremely smooth. Menstruation had never taken place, and everything led to the belief that she had never had sexual intercourse; this was, moreover, almost impossible, on account of the extreme narrowness of the vulva and vagina.

The reality of the syphilitic affection here might be disputed; but the information furnished by the patient, and that on several occasions, the premature death of most of her brothers and sisters, the arrest of development which she presented, the peculiar condition of her dental system, and the falling off of the hair without appreciable cause, as well as the characters of the lesions met with at the post-mortem examination, are, in our opinion, so many proofs in favour of syphilitic disease, and, moreover, how else could one account for the numerous symptoms presented by this woman from her birth until the moment of her death?

Syphilis once admitted, is it not reasonable to suppose that the peculiar change in the lung as well as the hepatic lesion were a direct effect of that disease?

The slow evolution of the pulmonary affection, its localisation in a single lobe, with integrity of the apices of both lungs, the special changes in the iris and in one of the testicles, and the exostosis upon the tibia: such are the various circumstances which led us to admit, in the following case, the existence of a pulmonary manifestation of syphilitic origin. Let us add that the anatomical condition of the blood glands also tended to strengthen this diagnosis.

Gonorrhœa and chancre, iritis, hyperostosis of the tibia; phenomena very similar to those of general paralysis.—Wasting, cachexia.—Death.—Slight change in the cerebral substance; chronic pneumonia and gummy tumours in the lung; pigmentary choroiditis, periorchitis.

OBS. XLIV.—T., æt. 42, entered the Hospital de la Pitié, January 17th, 1851. He was a tall, robust, fair man, and the only diseases he had had formerly consisted in a gonorrhœa and a chancre. He did not remember to have had any symptoms upon the skin or mucous membranes. Some years ago, he was seized with pain in one of his eyes; examination of that eye showed sufficiently that he must have suffered from iritis, as evident traces of that affection remained: deformity of the pupil, and adhesions to the neighbouring parts. In the groin were found several small, isolated, hard and movable glands, but no cicatrix nor trace of buboes. The look was dull and fixed, the sight weak, the speech embarrassed and slow; his walk unsteady and difficult; he could not remain long in an upright position; his lower extremities were feeble and œdematous, but the urine did not contain any albumen. The right tibia was the seat of a hyperostosis; the skin was smooth, pale, and thin. There was slight cough, with little or no expectoration, dulness on percussion two fingers' breadth beneath the spine of the left scapula, absence of vesicular murmur, and a slight blowing sound in the same neighbourhood; there were resonance and normal respiration on the other side. The heart acted regularly and did not appear changed; the liver and spleen were normal. The appetite was small; there had been emaciation for some time, and his strength was failing from day to day. There was no fever.—He was ordered Van Swieten's drops.

After a few days the embarrassment in his speech appeared to diminish as well as the weakness of his memory and intellectual faculties, he reasoned and answered questions more clearly. Ten days after, he had diarrhœa, a white tongue, anorexia, and slight fever. His medicine was stopped, he was dieted and took opium pills. The diarrhœa ceased, but the œdema of the lower extremities increased and reached the abdomen. Towards the end of February, the patient complained of more oppression;

he coughed frequently and had purulent expectoration streaked with blood, very analogous to that of phthisis; his breath was foetid and repulsive, there were large mucous râles in the posterior part of the left lung, commencing from the spine of the scapula, a murmur not well marked, slight dulness on percussion, and want of elasticity. The existence of these signs towards the middle and lower part of a lung, especially when its summit and the lung of the opposite side were intact, and the concomitance of evident syphilitic manifestations, led us to believe that it might be a syphilitic affection of the lung. Unfortunately, the wasting of the patient and the advanced state of cachexia in which he was, rendered impossible any specific treatment. The oppression, the cough, and the expectoration continued; a febrile condition with evening paroxysms supervened, the wasting made progress, and death occurred March 15th, 1861.

The post-mortem examination was made forty-eight hours after death. —The abdominal walls were slightly greenish; there was œdema of the lower extremities, scrotum, and walls of the abdomen. The peritoneal cavity contained a little serum; there was slight hyperostosis of the right tibia.

Head.—There was very little hair upon the head, the cranium was normal, the meninges intact, the brain soft in places, there were brownish or yellowish granulations in the course of the vessels of the grey substance and also some granular bodies. On the left side, the iris was covered with a whitish exudation and adhered to the crystalline lens, the pupil was deformed, there were exudative and pigmentary choroiditis, and some granulations in the course of the vessels of the retina.

Thorax.—There were adhesions between the right lung and wall of the chest and œdema at the base of that organ, which was otherwise healthy. The lower lobe of the left lung adhered closely, by means of thick false membranes, to the thorax and diaphragm. Two small softened tumours were found at the point of adhesion to the diaphragm. On section throughout its whole extent, this lobe, which was remarkably indurated, presented three large anfractuous cavities filled with a white granular or caseous matter; hollowed out of the parenchyma of the lung, these cavities were lined with a layer of pultaceous matter, which did not differ from their caseous contents. The tissue of the lung was extremely hard in the vicinity of these cavities; it presented, when cut, a smooth, greyish, marbled surface, resistant like India-rubber, and impenetrable by the finger; the bronchi terminating in these cavities had their mucous membrane thickened, wrinkled, red, and granular. The upper lobe was not changed, but merely œdematous, and did not present the least trace of tubercle; some of the bronchial glands were indurated, blackish, and smooth on section. The heart was normal.

Abdomen.—The liver was not changed; the kidneys presented, on their surface, some cicatricial furrows, but were otherwise healthy. —The two layers of the tunica vaginalis adhered to each other; there was thickening in patches of the tunica albuginea; the substance of the testicles was yellowish and atrophied. The spleen and thyroid body were enlarged.

Some of the prevertebral glands, larger and softer than natural, presented, on section, a pink or yellowish colour (medullary aspect).

In reference to the preceding cases, it is possible to bring forward a certain number of facts adapted to show the advantages which may be obtained by an appropriate treatment, under circumstances apparently very serious, in which there was ground for suspecting syphilis.

Brambilla gives in his treatise on Phlegmon the following example which Swediaur and several other authors have thought it advisable to reproduce :—"An electuary was ordered for a phthisical patient whose condition was desperate ; by a mistake of the apothecary, the electuary was given to a venereal patient to rub himself with, and the phthisical patient received mercurial ointment, instead of the electuary, to take internally. The latter, not thinking anything was wrong, took of this ointment about as much as a nutmeg in size, two or three times a day, and was radically cured of his disease, to the great astonishment of his physician, who afterwards learnt accidentally from the apothecary how the thing had come about."*

Swediaur (*loc. cit.* p. 169) also relates that Professor Frank cured radically, by a mercurial treatment, a case of phthisis accompanied by spitting of blood, purulent expectoration, and the most extreme emaciation. This is probably the case which J. Frank gives in a note to his *Pathologie interne* (t. iv. p. 267). I find, he tells us, in my father's papers the following report :—"Ann. 1785, virum placentinum caravi, qui herpete venereo ad perinæum laborans, simul ad pectus dextrum, de dolore conquerebatur, et post prægressa jam sputa sanguinis, cumque febris lenta et emaciatione, sputabat exigua sputa purulenta cum punctis sanguineis sæpe remixta. Credidi eandem herpeticam materiem pulmones exedere in parva licet superficie ; neque huic causæ est multum puris fundere, sed in superficie potius divagari amat. Curam mercurialem adhibui, et sputa et dolores pectoris plurimum diminuebantur, febris lenta disparuit successive et vires et naturalis forma emaciato corpori satis bene iterum restituebantur."

Richard Morton and Hoffmann have each seen a very analogous case. Amongst the numerous cases contained in Lagneau's thesis,†

* Brambilla, *Traité du phlegmon*. Swediaur, *Mal. syph.* Paris, 1801, ch. xviii. p. 398.

† *Thèse cit.*, Obs. XXXIX. and XLIV. One of these observations, first

there are two, rather incomplete it is true, but the symptoms of which, while they had more than one point of resemblance to those of chronic pneumonia, appeared to be favourably influenced by a specific treatment.

Leudet has given the case of a man of 35, who presented great emaciation, cough, dyspnoea on the least exertion, and slight frothy expectoration, in whom he found, together with Professors Grisolle and Velpeau, a slight dulness at the left apex, with harsh inspiration and prolonged expiration, and bronchophony without râles. Submitted to a treatment with iodide of potassium, mercurial pills, and sulphur baths, this patient, who had at the same time syphilitic disease in the testicle, became cured in a few months; the slightly changed voice regained its usual tone, the dyspnoea and cough disappeared, and there was a complete return of respiration at the apex of the left lung. The waters of Bagnères-de-Luchon completed the cure; the patient there regained his strength and flesh.

Recently, one of our teachers, Dr. Gubler, related to me the following interesting case:—"A pretty robust man, long rendered uneasy by a chest affection which he could not get cured, went to London for the purpose of being treated by a charlatan there. Having exhausted his resources, he returned worse than he went. He entered the Beaujon Hospital under my care, and I found large râles and a kind of rumbling sound towards the apices of the lungs. Thinking there might be tubercular cavities, I gave an unfavourable prognosis; things were at this point when I observed a syphilide which, according to the patient's account, was of the same date as the pulmonary affection. I gladly took advantage of this indication to administer iodide of potassium and was fortunate enough to see all the symptoms disappear with a rapidity which was truly surprising. The patient soon after regained his flesh. In this case, adds the learned physician of the Beaujon Hospital, the modification of the physical signs was too prompt to admit of a belief in the cicatrization of cavities; I am rather inclined to think that there was an induration of the lung which conducted the râles produced in the bronchi."

inserted in the *Journ. de méd.*, 1826, t. xcv., is related in the *Annales de la méd. physiol. de Broussais*, t. vii. p. 576, as *Pneumonie chronique réputée vénérienne*; the other is taken from W. Munk's paper, *Lond. Med. Gaz.*, 1849.

To these cases it would be easy for me to add several observed by myself and in which the syphilitic nature of the pulmonary affection did not appear less evident. But I shall content myself with giving the two following :—

OBS. XLV.—Q., *æt.* 24, a flower-girl, entered the Hospital de la Pitié, May 23rd, 1861. She was a tall and strong woman. Two years ago, she was seized with angina, which did not last less than two months; she had formerly had two children, who had died in convulsions soon after birth. On admission, there were partial destruction of the velum palati, cicatricial depressions at the roots of the hair, and an elongated and whitish cicatrix in the vicinity of the right sterno-clavicular articulation. For two months, this patient has had shortness of breath, pains in the sides, dyspnœa, and a harsh cough, accompanied by an expectoration consisting of a clear fluid which contains yellowish grumous matter. Percussion gives a marked dull sound in the neighbourhood of the supra-spinal fossa and auscultation shows a decrease of the vesicular murmur at that point. There is heard, moreover, in the other portions of the lungs a laryngo-tracheal whistling which masks the vesicular murmur. She was ordered to take Van Swieten's drops. Under the influence of this treatment, continued for more than a month, the cough diminished, the expectoration and the dulness disappeared, and the breathing appeared to have returned to the normal condition. This patient left the hospital, June 16th, in a state of almost complete cure. Apart from the change in the lung, shown here by the dulness and altered breathing, we may fairly ask, considering the existence of the tracheal whistling, whether the trachea or one of the bronchi was not diseased?

OBS. XLVI.—In the course of the month of April, 1861, I was called upon to examine a robust and well-formed man who had not in his family any tubercular antecedents. This man mentioned, as previous affections, a chancre, throat affections, and a very slight eruption. Apart from these symptoms, he had always enjoyed good health until the preceding January, when he had cough, difficulty of breathing, loss of strength, and emaciation. After having experienced several attacks of hæmoptysis, he now had abundant, thick, yellowish expectoration. There was decreased resonance on the right side beneath and around the spine of the scapula, normal on the left side. In a large extent of the upper lobe of the right lung was heard a somewhat hollow murmur and râles, phenomena which induced me to diagnose the existence of a cavity. On the left side, the breathing was rough and exaggerated, without appreciable abnormal sounds. This patient was emaciated; he had a yellowish, earthy colour; his strength was failing day by day; he had shortness of breath and dyspnœa and presented, at the same time, at the lower end of the left humerus, a hyperostosis which had almost the size of the fists of an adult, so that flexion of the fore-arm upon the arm could only be effected partially, although the articular surfaces had remained intact. This last

affection, as to the origin, of which I could not entertain the least doubt, induced me to prescribe the syrup of the iodide of iron. The patient left for the country, and later on, when his health was a little improved, I gave him iodide of potassium. At the end of a year, the lower end of the humerus had regained its normal size, and the movements of the forearm upon the arm were free; in the chest I found a marked improvement, there existed only a weakness of respiration and some râles on the right side, without any appreciable murmur. The cough was less frequent and the expectoration almost dried up. Struck with such a result, and observing the complete disappearance of the hyperostosis, I requested my patient to continue the treatment I had ordered him in the first instance, when he told me that he had never employed it. This assertion was in no way opposed to my diagnosis. I don't know, indeed, whether he told me the truth, but some time after his brother came to tell me that he had been seized with hemiplegia. Treated by ordinary means, this affection nevertheless became ameliorated, but later on, another attack carried off the patient rapidly.

Although wanting in anatomical verification, these cases, whatever may be the value thought proper to assign to them, will serve at the very least to direct the attention of observers to syphilitic affections of the organs of respiration.* If they had no other advantage, we believe that they were not devoid of utility, for it is important to know that chronic lesions of the lungs, like those of the other viscera, are most frequently dependent upon a vice of the constitution.

ARTICLE VIII.—APPARATUS OF INNERVATION.

Ulrich de Hutten, Paracelse. See *Aphrodisiacus* de Gruner, pp. 130 and 134, pointing out the existence of syphilitic paralysis. *Thierry de Héry*, La méthode curatoire de la maladie vénérienne. Paris, 1552. *Van Swieten*, Comment. in Boerhavii Aphorismos, 1773. *Prost*, Médecine éclairée par l'ouverture des corps, t. ii. p. 59. Paris, 1804. *Lallemand*, Recherch. anat. pathol. sur l'encéphale. Paris, 1830. *Duhamel et Legrand*, Recherches sur les désordres que le virus syphilitique peut

* Professor Gintrac, of Bordeaux (see *Gaz. hebdomadaire de médecine et de chirurgie*, p. 600. Paris, 1867), has recently communicated to the Medical Society of the hospitals of that city a case of syphilitic phthisis closely analogous to our own cases. Facts of this nature are, therefore, not very rare, and there is every reason to think that they will be observed still more frequently if attention be directed more especially to them. Consult Hermann Weber, Syphilitic disease in the liver, lungs, bronchial glands, dura mater, cranium, and sternum. *Transactions of the Pathological Society of London*, t. xvii. p. 152.

causer sur le cerveau, *Journ. de conn. méd.-chir.*, 1835, p. 448. *Ch. Bell*, The nervous system of the human body, with an appendix of cases and consultations on nervous diseases. London, 1836. *Budd*, Cases of apoplexy consequent upon syphilis. *London Med. Gaz.*, 1842. *Ebrard*, Névroses syphilitiques. *Gaz. Méd. de Paris*, 1843. *Rayer*, La Syphilis cérébrale ou méningienne. *Annales de thérapeutique*, t. v., 1847-1848. *Schutzenberger*, Syphilis simulant les troubles encéphaliques. *Gaz. Med. de Strasbourg*, 1850, p. 708. *Bedel*, Syphilis cérébrale. Thèse de Strasbourg, 1851. *Lucas Champonnière*, *Journ. de méd. et de chirurg. pratiques*, 1851. *Yvaren*, Des métamorphoses de la syphilis, 1854; et Des lésions cérébrales liées à la syphilis. *Gaz. méd. de Lyon*, 1858, No. 20. *Faurès*, *Gaz. hebdom.*, 1855. *Hildenbrandt*, De la syphilis dans ses rapports avec l'aliénation mentale. Thèse de Strasbourg, 1859. *Fr. Roth*, Syphilitische Gummageschwulst der harten Hirnhaut, aus der Klinik von Prof. Bamberger. *Aerslich. Intellig.-Bl.*, No. 37, 1859. *Th. Munch*, Hemiplegia syphilitica, aus Traube's Klinik, in *Deutsche Klinik*, No. 47, 1859. *Gust. Bremme*, De paralyse centrali syphilidem secuta, casus singularis, descriptione illustrata. Berlin, 1859. *E. L. Bertheraud*, Recherches sur les névroses syphilitiques. Bruxelles, 1860. *G. Lagneau*, Maladies syphilitiques du système nerveux. Paris, 1860. *Griesinger*, in *Archiv der Heilkunde*, 1860. *Le Gros et Lancereaux*, Des affections nerveuses syphilitiques. Paris, 1861. *L. Meyer*, *Allgem. Zeitschrift für Psych.*, xviii. p. 287, 1861. *Tüngel*, Chronische Gehirnkrankheit mit Beziehung zu constitutionell. Syphilis, in *klinisch. Mittheilungen, &c.*, p. 89. Hamburg, 1861. See also, *ibid.*, *Constit. Syphilis*, p. 39, 1859. *Ladreit de la Charrière*, Des paralysies syphilitiques. Thèse de Paris, 1861, No. 569. *Leubuscher and Henoch*, Comm. à la Société de médecine de Berlin sur les affections syphilitiques du système nerveux. *Deutsche Klinik*, No. 6, 1861, et *Gaz. hebdom.*, p. 268, même année. *Jackson*, *Med. Times and Gaz.*, June 22nd, p. 648, 1861. *A. Zambaco*, Des affections nerveuses syphilitiques. Paris, 1862. *Sonrel*, Sur les paralysies syphilitiques. Thèse de Strasbourg, 1862. *Goodwin*, Syphilitic affection of the brain. *The Lancet*, July 19th, 1862. *Russell*, *Med. Times and Gaz.*, February 8th, 1862. *Duncan*, Cases of syphilitic insanity and epilepsy. *Dublin Quarterly Journ.*, Feb. and May, 1868, Vol. XXV. *E. Wagner*, Das Syphilom des Nervensystems. *Archiv der Heilk.*, t. iv. p. 161, 1863. *Schupp*, Chronisch. Hirnkrank. mit Beziehung zu constitutionell. Syphilis. *Deutsche Klinik*, 22 and 23, 1863. *S. Wilks*, On the syphilitic affections of internal organs. *Guy's Hosp. Reports*, 3rd series, ix. p. 1, 1863. *Westphal*, Zwei Fälle von Syphilis des Gehirns, *Allgem. Zeitschrift für Psychiatrie*, xx. 5 and 6, p. 481. *Russell*, Syphilitic affections of the nervous system, *Med. Times and Gaz.*, October 17th, 1864. *Th. Reade*, Tertiary Syphilis, in *Dublin Journ.*, xxxvi. p. 324. *Leven*, *Gaz. méd. de Paris*, 1864. *Lancereaux*, Études sur les lésions viscérales syphilitiques. *Gaz. hebdom.*, 1864. *Jaksch*, Ueber Syphilis innerer Organe. *Prager med. Wochenschrift*, t. i. 1864; et *Sch. Jahrb.*, t. cxxii. p. 298. *Max. Leidesdorf*, Ueber Gehirnsyphilis. *Wien, Ztschr. med. Jahrb.*, xx. 2, p. 112, 1864. *E. Winge*, Meningitis spinalis gummosa, *Norsk. Magazin*, xviii. 1, p. 84.

The syphilitic affections of the nervous system were not altogether unknown to the earliest syphilographers (Ulrich de Hutten, Paracelsus, &c.), and already in the sixteenth century we meet with some observations concerning these manifestations. Nicolas Massa* relates a case of syphilitic mania which appears to have been connected above all with intense osteocopic pains. "A young man of 25 had an impure connection; he had deep ulcers, accompanied by pustules disseminated over the whole body. Every evening, at sunset, he felt very intense pains in the head, the severity of which, reaching the ventricles of the brain, produced attacks of acute mania. This young man recovered completely under the use of some mild purgative remedies, Indian pills," &c.

Thierry de Héry proved, as early as 1634, that syphilis may produce nervous affections; he quotes spasm and states that he treated a man suffering from epilepsy and syphilis by remedies adapted to the latter disease, and that this man was freed from both his evils.†

The celebrated work of Astruc contains numerous passages relative to syphilitic lesions of the cerebro-spinal apparatus. Almost all the encephalic disorders are pointed out in it: hemicrania, vertigo, convulsions, epilepsy, paralysis, sciatica, insomnia, &c.; but, unfortunately, Astruc confines himself to assertions only too vague, without occupying himself more minutely with the characters proper to each of these manifestations.

We read in Van Swieten: ‡ "Sæpe observantur cerebri læsiones in lue venerea inveterata, a levissima vertigine ad lethalem apoplexiam usque; pessimam epilepsiam, cæcitatem, surditatem, &c. Vidi in lue venerea inveterata, quæ tunc media ossa occupare solet, præcipue in cranio." That author regards syphilitic cerebral derangements as indirect or consecutive rather than primary. Benj. Bell § gives cases of syphilitic epilepsy and mania which are full of interest. Cirillo || also thinks that epilepsy may be syphilitic, and brings in support of this view the case of a soldier affected there-

* *De morbo gallico liber*, cap. vii. *Aphrodisiacus*, p. 56.

† *Méth. curat.*, &c., p. 15.

‡ *Commentaria in H. Boerhavi Aphorismos*. Paris, 1773, t. v. p. 371.

§ *Traité de la gonorrhée virulente et de la maladie vénérienne*, t. ii. Paris, 1802.

|| *Traité complet sur les maladies vénériennes*, trad. franç. de Auber. Paris, 1803.

with. J. Frank, Maisonneuve, Lagneau, Lallemand and Baumès, point out the existence of cerebral derangements connected with syphilis, and more particularly epilepsy. Ricord, Cullerier, and Vidal, have seen and reported cases of like nature, with post-mortem examinations. Rayer, Beau, Briquet and Guérard (*Ann. de thérap. de Bognetta*), Trousseau and Pidoux, Schutzenberger, Yvaren, and several other authors have also left interesting observations on this subject.

Most of these cases have been given in the treatises of G. Lagneau and Gros and Lancereaux. Virchow, Wilks, Meyer, Tüngel, Ladreit de la Charrière, Zambaco, the author of this work, and several others, have added fresh observations to the history of syphilis of the nervous system.

It is by the aid of these materials that we are about to attempt to trace successively the anatomical and semeiological characters of the affections of the nerve coverings, centres, and cords.

§ 1. *Affections of the coverings of the brain.—Syphilitic meningopathies.*

ANATOMICAL STUDY.

The dura mater is, of all the coverings of the brain, the one which most frequently undergoes the attacks of syphilis. Of the changes met with in it some are diffused and analogous to chronic pachymeningitis, others circumscribed and resembling gummy tumours; these two forms most frequently coexist. It also happens that the soft meninges, or even the encephalic substance, and perhaps also the bones of the cranium, participate in the syphilitic process, and then the dura mater is found firmly united to the subjacent coverings by means of a yellowish substance, which sometimes penetrates as far as the nervous substance.

Syphilitic pachymeningitis is external or internal according as one or other of the two layers of the dura mater is more particularly affected. External pachymeningitis (endocranitis) is most commonly accompanied by osseous lesions (thickening or atrophy, osteophytes). Internal pachymeningitis coincides rather with changes in the pia mater and brain. Numerous cases bear witness to the existence of this double manifestation. Rhodius* gives the history of a peasant

* *Nouvelle Bibl. méd.*, February, 1823. L. Gros et Lancereaux, *loc. cit.* p. 252.

affected with syphilis, in whose dura mater he discovered three solid white concretions. In a case observed by Bayle and Kergaradec,* there existed beneath the dura mater, which adhered to the bones of the cranium, four hard tumours, each of which was as large as a nut; the pia mater and arachnoid were thickened, indurated, and injected, and the cerebral substance changed at several points. Rayer has given the following case:—

A man 40 years of age, of vigorous constitution, was the subject of ulcers situated upon the velum palati and of syphilitic ozæna; he had osteocopic pains in the head and limbs, vertigo, weakness of the limbs, and deafness on the right side. He was afterwards seized with violent epileptiform convulsions, his fever increased, and he had coma soon followed by death.

Post-mortem examination.—The membranes covering the right hemisphere were lardaceous, and adherent to each other and to the brain, chiefly towards the base. In the middle fossa, on the right side, there existed a tumour the size of a pigeon's-egg, closely adherent to the bone lardaceous, evidently formed of plastic lymph, and analogous, in all respects, to a gummy tumour; the brain was softened at all the points where adhesions existed; there were no apoplectic clots; the portion of bone upon which the tumour rested was denuded and wrinkled.

In a case of Sanson's, quoted by Lallemand,† the cranium was thickened, the dura mater friable in the vicinity of the anterior portion of the left hemisphere of the brain; beneath, there was a trilobate schirrhous tumour, of the size of a small nut, of a somewhat yellowish, greyish white colour, continuous with the dura mater by its external surface, and with the white substance of the brain by its inner surface, and possessed of considerable vascularity.

In an analogous case, Virchow has seen consecutive obliteration of the cerebral carotid‡ rapidly followed by blindness and afterwards by softening of the brain. We are indebted to Meyer for

* Centur. i., Obs. XXXIII., Citation de W. James. *Dictionnaire univ. de méd.* t. iv. p. 978, trad. franç. de Diderot, &c. Paris, 1847.

† *Recherches anat. pathol. sur l'encéphale*, lettre vii. No. 2.

‡ Böning, *Deutsche Klinik*, 1861, No. 43, and Passavant, *Virchow's Archiv*, t. xxv. p. 171, have seen, the one the internal carotid and artery of Silvius, the other the basilar artery similarly changed. In a case observed by Gräfe, *Archiv für Ophthalmol.*, 1860, t. vii. p. 34, several vessels at the base of the brain were obliterated by the pressure from a large tumour.

several observations relative to the lesions with which we are now occupied. Some of these, it is true, were doubtful as regards their syphilitic origin; but the following one, however, leaves little to be desired:

G. H. had, first of all, several epileptiform attacks, then persistent cephalalgia and vertigo, then incomplete hemiplegia on the right side, with difficulty of speech; lastly, delirium and coma, trembling, jactitation and death.

The external surface of the dura mater, in the neighbourhood of the left anterior lobe, was thickened, rough, wrinkled and injected; the internal layer adhered to the brain over an extent of about three square inches, by means of a deposit of fibroid tissue, in which were found three dense, opaque, and whitish fibrinous masses; these masses, which were of the size of a small nut, penetrated partly into the brain, the grey substance of which was no longer recognisable; in the left corpus striatum there was a cyst as large as a small nut, evidently of apoplectic origin; the anterior half of the right corpus striatum was congested and softened; there was an old thrombosis of the left internal carotid; also, cicatrices and gummy tumours in the liver and serrations of the epiglottis.*

Roth has published a case which is not devoid of analogy with the preceding.

A man 52 years of age, who had had a chancre upon the penis, had never observed any other symptom of syphilis. Six weeks after admission into hospital, this patient presented a semi-indurated tumour upon the cranium and complained, especially at night, of pains in the head, for which he was ordered mercurial inunction; three days after, he had several epileptiform attacks; the following day he had acute fever and pneumonia of the left lung, which was followed by death. A star-shaped and extensive cicatrix existed upon the upper part of the chest. On the surface of the cranium were multiple cicatrices and anfractuosities due to rather small tumours of a yellowish white colour and fibrous; in the neighbourhood of the anterior portion of the left hemisphere of the brain, a smooth, circumscribed tumour traversed the dura mater and glued it to the adjoining parts; the Pacchionian bodies were enlarged and numerous; there were pneumonia and purulent pleurisy on the left

* *Allgem. Zeitschrift für Psychiatrie*, xviii. p. 287; and Schmidt's *Jahrb.*, t. cxiv. p. 312, 1862.

side; the liver was large, its anterior edge tumefied, and about the middle of the right lobe were seen two superficial cicatrices; more deeply seated were three hard, rounded tumours, in juxtaposition; the spleen was enlarged. The tumours of the dura mater and liver were of a greyish red colour and were due to hypertrophy of the cellular tissue with formation of multiple nuclei; there were found in them several points in the process of fatty degeneration, a sort of mummification of the cells and nuclei already formed.*

To the preceding cases might be added one given by Wagner, and several others which it would take too long to enumerate.† The existence of syphilitic lesions of the dura mater cannot, therefore, be doubted. These lesions sometimes consist in thickening of the membrane, on the surface or in the thickness of which is found a neoplasm of greater or less thickness; sometimes they are due to yellowish, caseous formations, diffused or circumscribed, in the form of tumours having the volume of a hemp-seed or a small nut, more or less vascular, and soft or susceptible of becoming softened in consequence of the retrograde metamorphosis which their constituent elements undergo. The convex surface of the hemispheres, the anterior part of the base in the region of the sella turcica chiefly: such is their usual favourite seat; in one case, Wagner met with this same lesion upon the falx cerebri.

We have already stated that such changes are seldom confined to the arachnoid or pia mater; but sometimes these membranes also are attacked primarily. Gildemeester and Hoyack have related a case of syphilitic change in those membranes, and Griesinger ‡ and Ziemssen § have seen others. Howitz describes, in two children born of syphilitic mothers, a layer of yellowish fibrinous exudation in the course of the vessels of the arachnoid, in the region of the upper and under surfaces of the hemispheres. Luys and Blachez || have given an analogous and very interesting case, in which numer-

* *Bayerisches ärztliches Intelligenzblatt*, 1859, No. 37.

† See Bonet, *Sepulcretum*, 1679, p. 1669. Pruner, *Krankheiten des Orients*. Erlangen, 1847, p. 194. Nunn, *Transact. Pathol. Society*, Vol. XI. p. 2. Dickinson, *ibid.*, Vol. XIII. p. 8. Murchison, *ibid.*, p. 251. Calmeil, *Traité des maladies inflamm. du cerveau*. Paris, 1859, t. ii. p. 280.

‡ *Archiv. für Heilkunde*, p. 73, 1^{re} livr., 1860.

§ Virchow's *Archiv*, 1858, t. xiii. p. 213. See also Leudet, Tüngel, *oc. cit.*

|| *Gaz. hebdom. de méd. et de chirurgie*. Paris, 1861, p. 198.

ous plasmatic nuclei were seen in the course of the small vessels which pass from the pia mater into the brain. In a case of Westphal's, which we shall give further on, the arachnoid also was affected.

From these cases it results that the syphilitic changes observed in the meninges may be compared to those in the parenchymas, since they assume very analogous forms. These membranes do not, therefore, any more than those which envelop the heart, form an exception to the general law which appears to govern, whatever may be their seat, the anatomical modalities of constitutional syphilis. Pachymeningitis without hæmorrhage, and tubercular meningitis especially, are the lesions the anatomical characters of which resemble most closely those of diffused syphilitic meningitis; the false membrane which characterises the first of these lesions, free in general from any adhesion to the visceral arachnoid, differs distinctly from the lardaceous thickening observed in one of our observations; the small, rounded, whitish and altogether peculiar granulations of the latter render difficult an error which may already be avoided by taking into account the respective seats of the two lesions.

Fungous affections of the dura mater, a name under which very dissimilar lesions are often included, such as epithelioma, fibro-plastic cancer, and fibroma, are distinguished from gummy tumours, some, such as epithelioma, by a histological constitution altogether peculiar, others, such as fibro-plastic tumours,* by their vascularity and a colour and consistence different to those of the syphilitic products. Let us add that the base of the skull is the usual seat of fibroma, while it is in the vault that gummy deposits are most commonly met with.

SYMPTOMATIC STUDY.

The functional derangements which correspond to syphilitic deposits of the dura mater evidently vary with the seat and extent of these lesions, and with the degree of compression which they occasion. In the cases in which the cerebral dura mater was affected, the symptoms observed were more or less violent headache, vertigo, epileptiform attacks, or even, more rarely, paralysis in the form of hemiplegia. If the dura mater covering the cerebellum was impli-

* The tumour mentioned in a case of Baudot's appears to us to have been of this nature.

cated, there were added to these symptoms nausea, vomiting, and even derangements of vision (photophobia). In support of what we are advancing we bring the two following cases :

Cephalalgia.—Vertigo.—Hysterico-epileptic attacks.—Albuminuria.—Erysipelas.—Death.—Post-mortem examination.—Gummy deposits of the cerebral dura mater, which was adherent to the subjacent membranes.—Induration of brain.—Gummy tumours of the epiglottis.

An unmarried woman of 40, domestic servant, pale and puffy-looking, went into hospital, March 15th, 1860. She had had for the last five months pains in the head with vertigo, and a partial loss of strength. Four days after admission, she had an epileptic attack.

April 14th, she had two fresh attacks, the last weaker, and in which, despite the loss of speech, consciousness remained intact. From this moment, there were lassitude, frequent cephalalgia, and puffiness of the face.

April 18th, she had another attack, brought on by the sight of another patient, who was seized with convulsions; these attacks were repeated July 19th and 29th and on the 4th of August. Having left the hospital on the 15th, this patient came in again on the 28th. The œdema re-appeared soon after she went out.

On the 3rd and 10th of September, she had loss of consciousness without convulsions. She was ordered diuretics which reduced the œdema. In October, the patient became melancholy; she had fits of oppression, buzzing in the ears, heaviness of the head, and crying.

In February, 1861, the œdema was more considerable; the specific gravity of the urine was increased; this fluid contained fine fibrinous cylinders, numerous blood corpuscles and a large quantity of albumen. The use of colocynth and gamboge was without effect. The dropsy increased and ascites supervened. There were no more convulsive attacks until April 3rd. After an attack which took place on that day, she had heaviness in the head, sopor, involuntary stools, a small and frequent pulse, and erysipelas of the left leg which had for its starting-point an excoriation of the skin. On the 5th, she had two epileptic attacks.—She died on the 6th.

During the last few days of this patient's life, it was ascertained that she had belonged to the class of prostitutes, and that she had been in hospital formerly for a primary ulcer of the posterior commissure, and, in 1857, for secondary symptoms.

Post-mortem examination.—The dura mater was closely adherent to the cranium on the left side. On separating it, there was seen to exist a firm layer of exudation, of a yellowish white colour, situated between the bone and that membrane, to which it adhered. The internal surface of the cranium was spongy and without polish. The frontal bone was thickened and anfractuous on the left side. On the external surface of the right parietal bone there was a depression as large as a five-franc piece, ill-defined, with osteophytes at its edges. The dura mater adhered to the

pia mater at this point, sometimes by cellular tissue with small areolæ sometimes by a callous exudation, and, at three different points, by solid, elastic, dry, and yellow masses, which penetrated between the convolutions from which they were in part inseparable. The medullary substance corresponding to these masses was injected and partially softened. There was no change elsewhere in the nerve substance and a small quantity only of serum in the ventricles. There was no cicatrix on the pharynx or velum palati, but a firm, transparent tumefaction on the external surface of the epiglottis, and on its middle portion a dirty red protuberance which showed, on section, a yellowish and solid deposit one line in thickness.

The aryteno-epiglottidean ligament was slightly cedematous, the larynx healthy. There was a large quantity of fluid in the pleuræ. The lower lobes of the lungs were slightly compressed and these organs were soft and infiltrated. The heart was small and dotted with red points; there were bloody striæ upon the posterior surface of the left ventricle. There was pinkish serum in the peritoneal cavity and the liver adhered to the diaphragm by means of bands of fibrous tissue. On the surface of that organ were numerous depressions due to a callous tissue which extended from the serous membrane into the substance of the liver. There were granulations of a cirrhose nature but no gummy deposits. The kidneys were somewhat hypertrophied, the cortical substance was tumefied and of a yellowish red colour; on section, this substance was injected and soft. There were adhesions of the genital organs to each other; the Fallopian tubes were distended with a watery fluid, the os uteri was the size of a pin's-head at most. There was nothing abnormal about the external genitals. The tibiæ were not enlarged. (Tünel).

Intense cephalalgia, nausea, vomiting.—Death.—Gummy tumours and adhesions of the meninges of the cerebellum.

A merchant 33 years of age had been treated during several years for frequent relapses of secondary syphilis of a mild character. Believing himself cured, he married and begat a healthy child. In March, 1859, he was seized with cephalalgia, nausea, and vomiting, which symptoms were at first intermittent and afterwards continuous. The cephalalgia, bearable when he was at rest, was increased considerably by motion. The vomiting came on especially when the patient got up. There were photophobia, abnormal acuteness of hearing, and starting at the least sound.

His appetite was diminished, all his food returned, his abdomen was drawn in, he had a slow pulse, his intelligence remained perfect, he had pain when his skull was pressed, but there were neither convulsions nor paralysis.

All treatment was unavailing. In the beginning of April, Dr. Tünel, who was consulted, hoped to arrest the evil by the aid of iodide of potassium, but on the 15th, the patient died of pneumonia.

Post-mortem examination.—The body was emaciated, the dura mater bloody and tense, the brain firm and turgid, the lateral ventricles distended by a transparent liquid, and the ependyma thickened. The cerebellum adhered to the right side of the base of the skull, and, at the same point, the dura mater and pia mater were joined together by a solid, transparent exudation, having at its centre a hard and yellowish nucleus. The trochlearis nerve traversed the exudation, but its structure was not changed, any more than that of the other nerves. The basilar artery, which was somewhat drawn to the right, was not the seat of any lesion. The brain was healthy.—There was nothing abnormal about the velum palati.

The lungs were infiltrated; there were adhesions of the pleura on the right side, with red hepatisation, and on the left side congestion. There were milky patches on the surface of the heart. The left lobe of the liver was atrophied and shrunken; there existed on its surface several funnel-shaped depressions. On the upper and lower surfaces of the right lobe were found several yellowish and irregular gummy deposits, which penetrated into the substance of the organ. The spleen was soft, the kidneys were injected but otherwise healthy. The mucous membrane of the stomach was of a greenish grey colour, thickened and a little softened. There was an indistinct cicatrix on the glans penis, without tumefaction of the neighbouring glands. (Tünel.)

It would be easy for us to give here a greater number of cases, but they would not prove more than the preceding. From the analysis of the facts known it results that syphilitic meningopathies present common symptoms, which are, cephalalgia usually continuous, localised in one point of the head, accompanied by vertigo and giddiness, and convulsive attacks analogous to those of epilepsy, the undoubted connection of which with gummy tumours of the meninges has already long been known.*

These affections present, moreover, special symptoms dependent upon their anatomical seat: thus, for certain portions of the brain, it is aphasia (Obs. I. of Tünel); for the cerebellum, vomiting, staggering, photophobia, or strabismus, especially when the substance of the cerebellum participates in the change. Contraction and paralysis are symptoms comparatively rare. More frequently, a slight obscuration of the intellectual faculties is observed, sudden losses of consciousness with or without convulsive attacks (*syphilitic epilepsy*). Are these attacks always the result of a material lesion?

* *Lues venerea epilepsiæ non raro parens est, gummositates et tubercula in meningibus, in ipso quoque cerebro, vel exostoses in superficie cranii interna producens.* Lazearme, *Tract. de morbis internis capitis*, p. 270.

At present, I do not hesitate to answer in the affirmative, for no case has been recorded which would clearly prove the contrary. Moreover, even in the cases which have been regarded as reflex epilepsy, there was at the very least a lesion of the bones of the cranium which by its presence modified, beyond doubt, the cerebral functions. Further, the attacks in question have characters distinct from those of true epilepsy.

They are sometimes seen to be wanting in certain peculiar attributes, such as the aura, the epileptic cry, the foaming at the mouth, the somnolent condition, &c. Sometimes a small number of muscles, or some groups only, become convulsed, and these muscles generally occupy the same half of the trunk; various groups may be affected successively. They develop themselves usually without appreciable cause, at an advanced period of life, as has already been pointed out by Vidus Vidius and since noticed by most observers. Out of thirteen cases collated by my friend Dr. Gros and myself,* syphilitic epilepsy supervened ten times towards the age of 30, three times between 15 and 16, but of the latter individuals, one had been syphilitic from the age of 7, and the other two from the age of 14. In forty-three cases collected by Jaksch, thirty-one individuals were from 30 to 40 years old, eleven from 40 to 50, and one only was 20 years old.

These attacks, which last from three to twenty minutes and more, have shown themselves from one to sixteen years after the first infection. In the cases in which a post-mortem examination was feasible, various anatomical lesions have been met with, but they almost always reached the meninges, the bones, or the periphery of the encephalon, and much more rarely the deep-seated portions of the brain. A point which it is of importance to notice here and upon which we have already insisted elsewhere, is that evils such as cephalalgia, vertigo, &c., which most frequently precede the convulsive attacks, continue also during their intervals.† Sometimes it even happens that new derangements are added, such as paralysis of the muscles of the eye, or derangements of sight and hearing; later on,

* *Loc. cit.* p. 85.

† Does not this fact, already pointed out by Vidus Vidius and by J. F. Maisonneuve (*Rech. et obser. sur l'épilepsie*) and most of the observers who have followed, indicate, in itself, the existence of a permanent lesion?

if the disease has not been arrested, more extensive paralyses supervene, the mental faculties become weakened, and coma or prolonged convulsions are followed by death.

Slow in their development, the syphilitic affections of the meninges sometimes run a course which may be termed intermittent, especially at their commencement; more rarely continuous and progressively increasing, they may last for years, if no complication supervene. In the cases which I have given, the termination has sometimes been the effect of the syphilitic manifestations, sometimes the result of an intercurrent disease (pneumonia, erysipelas, &c.). Recovery is, however, possible, and a considerable number of cases exist in which the rapid disappearance of symptoms very analogous to those of which we have been speaking appears to indicate the favourable termination of an affection of this nature. Moreover, when in a patient who has long been suffering from cephalalgia, vertigo, and epileptiform attacks without hemiplegia, we see a rapid and complete cure take place under the influence of mercurials, it is reasonable to believe that the case has been one of disease of the meninges, should that point of the diagnosis have been doubtful. In fact, an exostosis, or a periostosis rarely gives rise to similar phenomena, and lesions of the brain itself usually cause paralysis.

Diagnosis.—The age of the patients, the absence of hereditary epileptic antecedents, and the circumstance that the attacks which commenced in the course of a syphilitic affection have been followed by derangements more or less persistent, are so many points which may serve to differentiate the epileptiform syphilitic attacks from true epilepsy. Pachymeningitis and non-syphilitic tumours of the dura mater, affections which most closely resemble, symptomatically, the lesions in question, are distinguished, the one by the rapid and almost sudden appearance of acute symptoms generally characterised by contraction, somnolence, and other signs of compression, the others by a cephalalgia in general little intense and symptoms slowly progressive; but, besides that these affections do not present the filiation of the syphilitic lesions, they are exempt from the cachexia peculiar to individuals who have reached the visceral period of the latter disease.

The prognosis of these affections is not necessarily unfavourable, and it is easy to explain this, seeing that the nerve substance is generally little if at all affected. There is reason to suppose that an early intervention would easily overcome them, and, even if some-

what late, might still combat them with advantage.* In any case, the prognosis is less serious than if the lesion were of less extent but the result of a different cause.

§ 2. *Affections of the encephalic mass.—Syphilitic encephalopathies.*

More rare than the affections of the liver, more frequent, perhaps, than those of most of the other viscera, the syphilitic lesions of the encephalon do not differ essentially from the latter. They have their starting-point in the interstitial conjunctive substance, and present themselves with the same anatomical forms.

ANATOMICAL STUDY.

Diffused form or syphilitic encephalitis.—The few cases which establish the existence of this anatomical form of syphilis of the nervous centres have generally been described under the name of softening or induration of the brain.

In an epileptic woman who was also the subject of gummy pericranitis, Nic. Mediavia found, beneath the destroyed portions of the cranium, the cortical substance of the brain harder than in the natural state, being not less so than the tissue of the liver. In the same hemisphere, there was a cavity the size of a small nut, circumscribed by livid and very soft walls, formed by the medullary substance, and from which ran a liquid resembling serum in the midst of which swam some filaments (Morgagni, *Epist.* ix. 23).

In an officer who had long been suffering from constitutional syphilis, and who, during the latter part of his life had pains and stiffness in the neck, paralysis of the arms with numbness, and emprosthotonos in the upper part of the body, Virchow found the longitudinal sinus intact, and the brain depressed at its convexity; the convolutions, which were flattened and small, contained but little blood; the cerebral substance, which was yellowish and very tenacious, almost resembled leather in consistence. The ventricles of the brain were filled with serum.

In a case observed by ourselves, at the same time that there was unusual firmness of a part of the cerebral substance, which appeared

* Cases in support of this view will be found in our work upon syphilitic affections of the nerves.

as if it had been steeped in alcohol, there existed a point of softening at the extremity of the cornu Ammonis on the right side, and effusion into the ventricles. The patient, who was 68 years old, had had, at 20, an indurated chancre and, six months afterwards, a syphilitic eruption with alopecia. Intense cephalalgia, somnolence, and hemiplegia with falling off of the right upper eyelash; such were the symptoms which were rapidly ameliorated by iodide of potassium; later on, embarrassment and then loss of speech, delirium and the phenomena of cerebral compression manifested themselves and were followed by death.*

Fleming has seen, under similar circumstances, the medullary substance of the left hemisphere, at the posterior limit of the lateral ventricle, hyperæmic and transformed into a mass having a lardaceous appearance. Twice we have met with hypertrophy with waxy degeneration of the ependyma in cases in which constitutional syphilis appeared incontestable. In a case observed by Meyer, mention is made of the adhesion of the meninges, and, at the same time, of the transformation of the cortical substance of the brain into a whitish yellow pulp; in the medullary substance, on the contrary, there existed several points of induration, of a transparent appearance, having at their centre a hard and whitish nucleus. In a histological point of view, these various lesions are characterised by the presence, in the midst of the nerve substance, and especially in the course of the vessels, of small rounded nuclei (conjunctive hyperplasia); the web is sometimes thickened, or there are found in it abundant fatty granulations when the neoplasm and the nerve elements consecutively affected are partly disorganised. We see that there exists in these different cases a true cerebral sclerosis, which only differs from non-syphilitic scleroses by a greater tendency of the elements of conjunctive tissue to undergo transformation.

Cerebral softening is sometimes the consequence, if not the first and the last term of the lesion with which we are occupied. With syphilis, no doubt, is connected the origin of a certain number of cases of softening of the brain. Cases in which the existence of an induration and of a central softening are met with appear compatible with this view. We have already given one case in which this double change was found. Faurès reports, in the *Comptes rendus de*

* L. Gros and Lancereaux, *loc. cit.* p. 242, Obs. CXXI.

la Société de médecine de Toulouse (1853-1854, p. 29), the case of a young woman of 23, who advanced rapidly to syphilitic cachexia, and in whom treatment with iodide of potassium had scarcely been commenced when convulsions followed by hemiplegia supervened. Death occurred at the end of six weeks; the brain was found to be hard and sandy; there was a point of softening in the right optic thalamus. A case of Tüngel's, which we shall give further on, may be placed with the preceding. In other cases, the softening of the brain occurred still more rapidly and the encephalitis was more acute, as is seen in an observation by Reynaud de Toulon (*Arch. gén. de méd.*), in which, together with softening of the corpus striatum, was found sclerosis of the spinal marrow. A short time previously, the patient had had double syphilitic orchitis. The following case, in which the softening had for its seat the protuberance, is a fresh example of encephalitis supervening without any other apparent cause than a syphilitic affection.

Obs. XLVII.—Mrs. D., æt. 60, entered the Hospital de la Pitié, Dec. 15th, 1862, under the care of M. Marotte. She was of good constitution and middle height, her skin dry and yellowish, she was cachectic-looking. Pustules of ecthyma, arranged in a circle, and ulcerations, were seen on the skin, in the neighbourhood of the right shoulder. The tibia of the same side was the seat of an exostosis.

On being questioned concerning her antecedents, this patient admitted that she had had venereal disease. It was observed, on her admission, that her look was strange and stupid and her answers incoherent; moreover, she had not the full use of her limbs, and frequently let fall objects which she had in her hands; she could sew with difficulty only, on account of the trembling of her fingers. Under the influence of an antisymphilitic treatment, which was indicated by the cutaneous affection, the various phenomena underwent a very notable change, so that the patient was about to leave the hospital, when, in consequence of a visit from relations, on the 28th of December, she fell into a kind of coma, and was seized with convulsive attacks, which were repeated several times before her death which took place on the 31st of December.

Post-mortem examination.—The pustules of ecthyma were in a great measure cicatrised.

The cranium was intact, and the meninges were healthy; some of the anterior convolutions of the brain appeared firmer than natural and a little atrophied; the hemispheres did not present anything special. The pons Varolii was the seat of a softening which occupied about one-half of its superior and anterior portion; at this point the nerve substance, less firm than usual, encroached with its injection and colour upon the neighbouring parts; it was traversed by numerous vessels, and was of a reddish

tint; the nerve tubes were friable, broken, granular, and in their intervals were found very abundant round or ovoid nuclei.

The internal membrane of the ventricles was everywhere covered with small prominent points, which gave it the appearance of a cat's tongue; it was thickened and contained numerous amyloid corpuscles; these same corpuscles were also met with in one of the optic thalami.

The spinal ependyma formed in the centre of the cord a small cylinder of the size of a knitting-needle; it was formed of conjunctive substance and of numerous amyloid corpuscles, some of which turned blue on the application of tincture of iodine. The medullary bundles were more firm in their upper portion than in the normal state. The cerebral arteries were intact and the trunk of the basilar free. The other organs were little changed; the spleen was enlarged, as was also the thyroid body; the liver was fatty and had cicatrices upon its surface.

A pretty similar case presented itself recently at the Hôtel-Dieu, in the practice of our teacher, Professor Grisolle, where I had the opportunity of observing it with my colleague and friend, Dr. Hémeu.

To judge from these cases, the anatomical characteristic which distinguishes syphilitic cerebral softening from softening of the brain from obliteration of the arteries would be the absence, in the latter, of any product of new formation.

It would be easy for us to bring together here a greater number of cases of syphilitic softening of the brain. Gubian,* in a case in which Diday and Teissier, of Lyons, had diagnosed the possible existence of cranial exostosis, found softening of the superior and anterior portion of the right hemisphere of the brain. Dufour† communicated previously a very similar case. But as regards these observations and many others, in which the state of the cerebral arteries was not taken into account and microscopical examination was wanting, doubt must necessarily exist concerning the cause and nature of the encephalic lesion.

It is to be remarked that cerebral softening has sometimes been observed during the course or at the end of secondary affections: Gjour and Faurès each give an example of this. But there is good reason for asking whether the disease had not already arrived at the tertiary period. Some observations of Zambaco's do not appear more conclusive.

* *Gaz. méd. de Lyon*, 1858, p. 342.

† See Gros and Lancereaux, *loc. cit.* pp. 202 and 205.

From the preceding discussion it results, in our opinion, that the brain may, under the influence of syphilitic infection, become the seat of a change which, according to its degree of acuteness and its standing, expresses itself sometimes by induration, sometimes by softening, modifications closely resembling histologically the diffused conjunctive hyperplasia which we have seen in other organs. In some rare cases, the encephalitis would appear not to have been partial only but generalised on the periphery of the encephalon, if we may judge from two very recent observations by Westphal.*

Circumscribed or gummy form.—Syphilitic gummy tumours of the encephalon not being sufficiently known as yet, it is of importance to trace carefully their anatomical characters. Distinguished observers have long since pointed out their existence. Bonet and Prost furnished cases which it is difficult to contest. An observation by Bayle and Kergaradec shows us these tumours situated both in the brain and on its coverings. The anterior extremity of the left hemisphere was occupied by several bodies of a cartilaginous consistence, smooth and shining on section, not appearing fibrous under the knife, and adhering one to another. The sphenoid and ethmoid bones were partly destroyed; the dura mater presented on its surface four hard tumours, of the size of a nut; the pia mater and arachnoid were thickened, indurated, and injected; there was also softening of the nerve substance in the neighbourhood of the cerebral tumours. Ward and Tacheron have seen analogous cases, the syphilitic origin of which was less evident. Gjor, Nélaton, and Yvaren have furnished examples which, by reason of the concomitant caries or exostoses of the cranium, leave less doubt concerning the diagnosis. In like manner, Gildemeester and Hoyack found in the anterior lobe of the brain a tuberculiform nucleus, consisting of a solid, amorphous, hyaline exudation, partly transformed into conjunctive tissue. Ludyer Lallemand points out in the left hemisphere of the same organ in the vicinity of the centrum ovale of Vieussens, the existence of a tumour of irregular shape, of the size of a small nut, surrounded by a smooth covering which adheres to the partly softened cerebral substance. In a case formerly communicated to us by one of our teachers, Dr. Hérard,† the right corpus striatum was the seat of two tumours which, on section, presented two dis-

* *Allgem. Zeitschrift für Psychiatrie*, xx. 5, p. 481, 1863.

† Gros and Lancereaux, *loc. cit.* p. 255, Obs. CXXXVI.

tinct parts, one cortical, hard, forming a resistant shell of a pinkish yellow colour, the other central and much less dense. Pilon read before the Medical Society the report of a case of two tumours, one of which occupied the left half of the inferior surface of the pons Varolii, and the other the optic thalamus of the same side. The sub-cutaneous cellular tissue contained gummy tumours.* This same coincidence is met with again in a case of Meyer's, in which the anterior lobe of the left hemisphere of the brain presented, in its substance, a hard mass the size of a crown-piece, closely adherent to the cortical substance, and composed of whitish or yellowish opaline nodosities, varying in size from that of a millet-seed to that of a pea. The dura mater was the seat of an exudation of the same nature. In one of our own cases, the syphilitic deposit, which was situated in the cortical layer of the hemisphere and adherent to the meninges, was softened and confounded with the adjacent cerebral substance, the constituent elements of which had undergone metamorphosis. Lastly, the brain of a woman who died in the Hospital De la Charité, under the care of Dr. Pelletan, was presented to the Anatomical Society by Nicaise.† It contained several tumours of the size of a small nut, one of which had for its seat the right peduncle of the brain, while the others were grouped together in the midst of a fibroid mass which occupied the posterior cornu of the hemisphere.

The cerebellum is not exempt from this change. Ward‡ found in the right hemisphere of that organ a quasi schirrhous tumour of the size of a small nut and of a cartilaginous consistence. Wagner has twice observed the presence of gummy tumours in the substance of the hemispheres of the cerebellum, but in one of the cases given by that observer, the syphilitic origin of the change was, at least, very doubtful; there was rather cause to believe it a case of true tubercle.

Such are the various facts by the aid of which we may seek to define the anatomical characters of syphilitic gummy tumours of the encephalon. These deposits, which are generally multiple, occupy various points in the hemispheres of the brain, in the isthmus of the encephalon, and in the cerebellum; they present tumours sometimes isolated and generally surrounded by a fibrous zone, a kind of

* Zambaco, *Des affect. nerveuses syphilitiques*, p. 490.

† See Nicaise, *Bullet. de la Société anat.*, t. i., 1863, p. 186.

‡ Ward, *Nouv. Bibl. méd.* t. vi. p. 368.

smooth and more or less adherent shell, sometimes grouped and joined together by a fibroid stratum. Varying in size from that of a pea to that of a nut or a walnut, and of a whitish or yellowish colour, these tumours, of a firm, chondroid consistence, or soft and, as it were, caseous, have their favourite seat in the periphery of the encephalon, chiefly in the region of the anterior or posterior lobes of the brain.

Consisting to some extent of a series of superposed layers, these deposits do not differ from gummy tumours of the heart and liver, for we find in them almost the same amorphous stratum and the same constituent elements. Like the latter, they also present, according to Wagner, an entirely peculiar arrangement by virtue of which the nuclei and cells are contained in fusiform alveoli situated in the midst of the conjunctive tissue. In one case related by that author, some vessels of small calibre were obliterated and infiltrated with the cells; but there is reason to ask whether this was not rather a case of cancerous affection (sarcoma). We are the more disposed to adopt this supposition as clinical observation was entirely wanting.

The metamorphoses which gummy tumours of the abdominal viscera undergo are met with again in the syphilitic deposits of the encephalon. In consequence of the granulo-fatty metamorphosis to which they are subject, these products gradually lose their consistence, they become more and more soft and yellowish, decrease in volume and soon become confounded with the cerebral substance, if they be not separated by an organised covering. This explains the variety of their forms.

The following case is adapted to show the course which this process runs.

Secondary syphilitic symptoms ten years previously.—Cephalalgia, vertigo, amblyopia; weakness of intellect with sudden hemiplegia of the left side.—Syphilitic tubercles on the face and neck.—Contraction of the rectum; treatment with iodide of potassium.—Disappearance of the syphilitic tubercles. Amelioration of the cerebral symptoms; later on, cachexia and death.—Yellowish deposits and lenticular gummy tumours in a great measure changed into a fatty substance.

OBS. XLVIII.—S., æt. 31, entered the Hôtel-Dieu, May 30th, 1861. According to the information then obtained, she had been treated ten years before, at Lourcine, for syphilitic symptoms. She had violent headache of two years' standing, with decreased power of vision, and

weakness of the intellectual faculties. For some months she had had an eruption upon the skin of the face and neck; it would appear, moreover, as if she had had epileptiform attacks; lastly, some days before, she had been seized with apoplexy accompanied by hemiplegia.

Present condition.—The cutaneous surface presented a slightly yellowish or bronzed tint; on the chin and neck were seen papular protuberances of a brownish red colour arranged in the form of a circle; there existed in the neighbourhood of the ears cutaneous tubercles evidently syphilitic; there was hemiplegia of the left side; the leg could still be moved at will, but the arm was entirely immovable; sensibility was intact, at least to a great extent; the labial commissure was somewhat drawn to the right; vision was almost entirely lost upon the left side, but the eye appeared healthy to an ordinary examination. There was nothing unusual appreciable about the other organs. At two or three centimeters from the anus, the finger encountered a kind of cicatricial disc which it was difficult to pass. There was transient diarrhœa.

The coexistence, in this patient, of a syphilitic cutaneous affection and of cerebral derangements which had something altogether peculiar in their evolution and course, led Dr. Hérard to assume that he had to deal, in this case, with a double and perhaps triple manifestation of syphilis. Consequently, a specific treatment was adopted and the cutaneous tubercles gradually disappeared and the hemiplegia diminished without entirely ceasing. The treatment (iodide of potassium and pills with proto-iodide of mercury) was continued for several weeks, but did not prevent the appearance of epileptiform attacks with strabismus, but without any biting of the tongue. After some months, the specific treatment, not having effected a complete cure, was abandoned. The patient remained in the hospital. The paralysis of the arm became more complete, the deltoid of the left side gradually became atrophied, and the shoulder appeared to sink; diarrhœa supervened, slight at first, afterwards abundant, and, during the latter part of her life, she had frequent vomiting; the cachexia steadily increased, the headache and vertigo reappeared, and the patient succumbed March 12th, 1862.

Cranium.—The brain and meninges were pale and not injected; on section, the cerebral substance was discoloured; its consistence, diminished at some points, appeared firmer than natural at others. On careful examination, there were recognised, on cutting through the cerebral substance on the right side, some yellowish masses around which that substance appeared torn and softened. There were yellow patches on the surface of the ventricles, in the vicinity of which were found small tumours of the size of a pea or a lentil. These tumours consisted of a dark-coloured central nucleus, around which it was easy to extract with the forceps a kind of yellowish membrane. This membrane was composed of fibres of conjunctive tissue, of spherical granular bodies, of abundant fatty granulations, of oil globules, of crystals of fatty matter, and also of a few degenerated capillaries, while the central nucleus contained only granulations, for the most part fatty, fat globules, and deformed granular nuclei. The cerebral substance, less consistent around

the yellowish masses, was manifestly changed. Some of these masses, of small volume and a greyish colour, contained a fibroid matter. The yellow patches presented the same colour as these masses, and there were found in them chiefly elements of fatty matter and detritus of conjunctive tissue and of cerebral substance. This lesion was met with again on the left side, although the right hemisphere was the principal seat of it. The grey matter of the convolutions did not appear changed; some of the cells, however, were very granular and a considerable number of the capillaries were loaded with fatty granulations; it was easy to recognise, with the naked eye, three layers, the middle one of which was of a well-marked yellowish tint. The bones of the cranium were thickened.

Thorax.—Several tubercles were found at the apices of the lungs, some of the size of a lentil, others of a small nut, all formed of a dry, yellowish, granular matter. The rest of the lungs was healthy.

The heart was loaded with fat; the consistence of its walls was soft the valves and orifices were intact. There were some slight depressions on the surface of the liver. That organ did not contain any gummy tumour, but it was in an advanced stage of fatty degeneration. The cells contained, some of them crystals of margarine, others abundant granulations and fat globules.

The spleen was not changed. The kidneys were of a yellowish colour they were large, soft, but not appreciably diseased.

The alimentary canal, the eyes, and many other organs which it would have been of importance to investigate, could not be examined. The deltoid and the circumflex nerve, which here deserved especial attention, could not be examined on account of the little time allowed for the autopsy.

The fatty, or more rarely, the calcareous metamorphosis is not always the last term of the syphilitic deposits of the encephalon. They may finish by being entirely absorbed, but not without leaving traces of their passage. Under these circumstances, in fact, the fibrous zone which circumscribed the central core may present the form of an empty cyst, of membranous layers, or lastly of cicatrices altogether analogous to the cicatrices of the other organs. In patients dying of syphilis, these remains of absorbed gummy products have several times been taken for cysts.

Lesions of cystic appearance and cicatrices.—A glance back at the facts hitherto published enables us to recognise that several cerebral cysts, regarded as simple coincidences, were nothing else, in reality, than the persistent envelope of a gummy tumour. These facts are :—

A woman 45-years of age, who had ulcerating tubercles of the skin of the nose and cheeks, regarded by M. Cazenave as syphilitic,

succumbed after having suffered from derangements differing from those of cerebral hæmorrhage. At the post-mortem examination, Féréol * found a peculiar change in the kidneys and in the intraventricular lobule of the corpus striatum, a small cavity full of a greyish, serous fluid, capable of containing a small nut, and lined in its interior with a kind of thin membrane.

Meyer † saw in one case the right hemisphere of the brain transformed into a cavity traversed by numerous cords in the form of a network and of which the walls consisted in a thin layer of softened substance. The optic thalamus and corpus striatum of the same side were atrophied. There were also gummy tumours upon the cerebral dura mater and in the liver. Epileptiform attacks, accessions of mania, and complete hemiplegia of the left side, such had been the phenomena observed during life. Our Observation XXX. (p. 344, Vol. I.) is a good example of this same arrangement. Another patient, who had had vertigo, headache, and epileptiform attacks, presented in the left corpus striatum a cyst the size of a small nut, of apoplectic origin by Meyer's account, but in our opinion resulting from syphilis, for there existed, moreover, three tumours situated in the midst of a fibroid tissue deposited between the dura mater and the surface of the left anterior lobe, softening of the right corpus striatum, and gummy tumours in the liver. This case may fairly be compared with the Observation CLVIII. of the *Traité des maladies inflammatoires du cerveau* of Dr. Calmeil. In that case, which was that of a patient who had previously presented unmistakable symptoms of syphilis, the whole of the right hemisphere was hollow and converted into a kind of pouch of considerable size, nothing remaining of the nerve substance which usually occupies the centre of the anterior, posterior, and middle lobes. The optic thalamus and corpus striatum were atrophied, or reduced to the condition of shapeless protuberances. Empty cells, numerous filaments, pseudo-membranous plates stretched out like network, were attached here and there to the inner walls of the bag which had taken the place of the cerebral substance. Still other cases exist which plead in favour of the doctrine we are defending. One quoted by Bristowe (*Path. Transact. of London*, p. 21) makes mention of a cyst of the size of a small nut, situated in the anterior portion of the left corpus striatum.

* *Bull. de la Soc. anatom.*, 1856, p. 402.

† *Loc. cit.* Obs. VI.

tum. The thickened dura mater contained several gummy tumours. The cranium was perforated, and tumours of the size of a small nut, of lardaceous appearance, were met with in the thickness of the frontal bone. The liver was hard, misshapen, and in a state of degeneration which gave it the appearance of a yellowish schirrhous tissue. At some points it appeared possible to distinguish in its interior masses of encephaloid matter, and this matter was abundant in the lobulus Spigelii. In a case of syphilis furnished by Wagner, mention is made of the presence, in the interior and posterior part of the left corpus striatum, of a kind of serous cyst in the form of a fan and of the size of a cherry-stone.

Side by side with the preceding arrangement is another which differs only by the less extent of the anatomical change and with which it is equally important to be acquainted.

Our Observation XL. mentions a slight depression resembling a cicatrix on the surface of one of the convolutions, and more deep-seated a bridle or greyish linear cicatrix, some millimeters in depth by about two centimeters in length. Meyer (*loc. cit.* Obs. VIII.) found, at the same time with osteophytes upon the internal surface of the bones of the cranium, a change in the dura mater, with induration of the transparent septum, sclerosis of the central portions, and depressions more or less deep in the right half of the pons Varolii and in the left part of the medulla oblongata. These depressions of a greyish blue colour, true cicatrices, were continued downwards into the organ by irregular, striated, reddish grey prolongations, of a lardaceous appearance. The greyish points consisted of a fine tissue with longitudinal striæ and fatty corpuscles. The neighbouring substance was composed of detritus of nerve elements, wasted nerve fibres, and amylaceous corpuscles. Analogous cases would doubtless be found in Calmeil's rich work.*

We close this part of the inquiry here, although we have by no means exhausted the whole series of cases in which syphilis might be shown coexisting with a cerebral cyst. Let us add that this lesion is often found to be described by a paraphrase, on account, no doubt, of its imperfect resemblance to the serous bag known under the name of cyst in anatomical language.

* *Traité des malad. inflamm. du cerveau*, t. ii. chap. vi. p. 231, Obs. CXLI., &c.

To sum up, gummy tumours of the encephalon present objective characters which vary with the phases of their pathological evolution; resembling pretty closely, at a certain period, tubercle, or fibrous or cancerous tumours (glioma, sarcoma), they present, later on, an analogy with old serous or hæmorrhagic cysts. By their slight vascularity, syphilitic neoplasms are distinguished from cancerous or fibrous tumours; but they more closely resemble tubercle of the brain, with which they have probably several times been confounded. Tubercle of the brain, however, is not so clearly circumscribed by a fibrous zone; it undergoes more uniformly the fatty degeneration, and is often single and surrounded by granulations of the same nature.

Apoplectic cysts have a rounded form, and their walls are impregnated with the colouring matter of the blood in the amorphous or crystalline state. The absorbed infarctus are distinguished from cicatrices by the concomitant change in the arteries.

SYMPTOMATIC STUDY.

The symptoms peculiar to the syphilitic lesions of the encephalon may be grouped under several heads which are not devoid of relation to the anatomical lesions already studied. A first group, which seems to answer more especially to cases of partial encephalitis, consists in derangements of motion, more rarely in derangements of intelligence or sensation. Under these circumstances, the individuals, after having suffered more or less severe headache, are generally struck with paralysis. This most frequently assumes the hemiplegic form; but sometimes it remains confined to one limb, or to a single group of muscles, those of the eye in particular. The outbreak is sometimes sudden, especially in the hemiplegic form. Most frequently progressive and incomplete, this paralysis is, in certain cases, accompanied by contraction or simple rigidity. The muscles do not usually become atrophied, which is easy to understand, since the centres are here the ordinary seat of the lesion. Convulsions are rare in such cases, unless gummy tumours be added to the encephalitis or softening, as in the cases given by Faurès and Tacheron.

In a second group stand derangements much more rare, more particularly affecting the intelligence and characterised by difficulty of speech, dulness, and diminution with gradual loss of memory. Generally connected with a lesion of the periphery of the encephalon,

these derangements assume characters resembling those of general paralysis and paralytic dementia. Two cases given by Westphal* belong to this second group. One of these cases relates to a man 33 years old, who had for a long time had persistent headache with dilatation of the right pupil, projection of the eyeball, ptosis of the right eyelid, and convulsive attacks with loss of consciousness. This patient, whose memory gradually became weaker, could not find the right word, he stammered, tottered in his gait, and passed his motions involuntarily; iodine was given without effect. Later on, he grew stupid, and died. The left anterior lobe presented a cicatrix with a greyish floor and raised edges, in the neighbourhood of which the internal surface of the bone was covered with osteophytes. The dura mater adhered, near the fissure of Sylvius, to gummy masses which penetrated into the substance of the brain; the right corpus striatum presented on section several points of softening, the left was simply injected; the pons Varolii was of diminished consistence, the pia mater was thickened around the optic commissure, the right oculomotor nerve was found to be transformed into a compact mass, and around the trigeminus existed a greyish gummy mass. The other nerves were free from any change.

The following case presented successively, so to speak, both the symptomatic varieties in question.

Old-standing syphilitic neuralgias.—Recent hemiplegia of right side, then of left.—Headache, insomnia; frequent weeping with distortion of the face.—Iodide of potassium, improvement; later on, phenomena of general paralysis; cachexia.—Death.—Post-mortem examination.—Hypertrophy of the bones of the cranium, yellowish masses formed in great measure of fatty elements; lesions of the kidneys.

Obs. XLIX.—Madame G., æt. 45, entered the Hospital de la Pitié, July 24th, 1860. She denied having had any syphilitic antecedent, and related that ten years before she had been seized with violent pains in the right side of the body, and more particularly in the right leg. These pains, which appeared to have followed the course of the sciatic and crural nerves, were not continuous; they were sometimes felt during the day, but frequently at night, together with a violent pain at the base of the skull; there was also insomnia. This state of things continued for about five years. During that time the patient was treated by several physicians,

* *Ueber Syphilis des Gehirns, Allgem. Zeitschr. für Psychiatrie*, xx., 5 and 6, p. 481, 1863.

who exhausted the remedies usually employed for the cure of neuralgia. Valleix, who applied deep cauterization to her thighs, the cicatrices of which are still visible, showed her as a curious instance of obstinate neuralgia. M. Marotte, under whose care she was subsequently placed, was led to have recourse to the use of iodide of potassium. The patient had not taken it for more than a week when the pains disappeared, and sleep returned to such an extent that she slept almost constantly, even during the visits of the physicians and of strangers. The treatment could not be continued long, the patient wishing to leave the hospital; but since then, fresh pains have appeared almost every month, which always yielded rapidly to the use of iodide of potassium; according to the patient's account, these pains sometimes disappeared on the very day after she began to take the medicine.

Present condition.—July 31st.—There is emaciation with a dry and scaly skin; difficulty in speaking dating from the end of January, stupid expression of face, frequent weeping, weakness of memory, but intellect still clear; loss of muscular power on right side with difficulty of raising the limbs and carrying out the usual movements with them. Sensibility was intact. She had cephalalgia, insomnia and giddiness, but all the senses were perfect. She was ordered iodide of potassium to the extent of twenty-two grains and a half per diem.

The treatment was continued for a week, and the symptoms disappeared in a great measure; copious diarrhoea having supervened it became necessary to discontinue the use of the remedy. Three weeks after, complete hemiplegia of the left side supervened in a few days. The sphincters were paralysed and there was almost constant weeping. The patient scarcely answered to questions; at every word which was addressed to her, she began to weep and to utter cries accompanied by very characteristic contortions, indicative of softening of the brain. She complained of intense pain with nocturnal exacerbations, localised in the back of the head, on the right side; she had insomnia, vertigo, and debility. Lying almost always upon her back, without strength and without will, she presented all the characteristics of an advanced state of cachexia.

September 8th.—The attempt was made to administer the syrup of the iodide of iron, and under the influence of this medicine, continued for five days, the patient felt better, and the diarrhoea ceased.

September 15th.—The iodide of potassium was resumed, to the extent of fifteen grains daily; some days later, the dose was increased to twenty-two grains and a half, then to thirty and forty-five, with the addition of syrup of morphia. The patient bore this treatment, the appetite returned, and the paralytic symptoms soon disappeared.

September 23rd.—She could raise her arm to her head and move the leg more readily; the tendency to weep no longer existed; the pain in the head, the insomnia, and the vertigo had almost entirely disappeared; the improvement continued during the following days.

On the 1st of October, the medicine was given to the extent of fifteen grains daily, and on the 10th, it was suppressed altogether. At that period, the patient still suffered from general weakness, a little more

marked on the left side; nevertheless, she could get up and walk about the ward, but not, it is true, without having some falls. Some days after, there was loss of consciousness. About October 8th, she again complained of pain in the occiput, giddiness, and insomnia; the tendency to cry reappeared. On the 20th, iodide of potassium was again given to the extent of fifteen grains. On the 30th, there was a decided improvement. The treatment was not continued beyond the month of December, and the weakness in the limbs and headache soon returned. The patient went to the Salpêtrière. During her stay in that hospital, she was placed amongst the incurables, and did not receive any further medical care. The muscular weakness increased, chiefly in the lower extremities, which became almost completely paralysed; the stools and urine passed involuntarily; sensibility became lessened, the least movement provoked laughter or tears; she had frequent headache; her memory was in a great measure lost, and she spoke with difficulty. She was able, however, to recognise those about her up to the time of her death. The cachexia became more and more marked; the skin was yellowish and earthy-looking; there supervened cedema and profuse diarrhoea which, together with a bad habit contracted long ago by this patient, contributed to cause her death, which took place on the 18th of September, 1861.

Post-mortem examination, thirty-six hours after death.—Average temperature. The walls of the abdomen and part of the trunk of the body were of a greenish colour; there was no rigor mortis. The lower extremities were very cedematous; there was no trace of cicatrices upon the body, but strongly-marked longitudinal ridges upon the nails.

Head.—The hair was abundant, the hairy scalp easily separated; the commissure of the lips was drawn slightly to one side; the bones of the cranium were hypertrophied, their thickness being more than doubled they splintered under the hammer, but only on the application of considerable force. A limpid and abundant serum escaped as soon as the cranium was removed; the veins of the meninges were dilated and gorged with black blood. Some milky patches of slight extent were observed on the surface of the arachnoid of the left side; the dura mater on the right side was dotted with blood and lined to a small extent with a very thin and transparent new membrane. The cerebral substance was everywhere softer than natural, the cortical substance somewhat yellowish. The lateral ventricles were dilated and contained a turbid fluid; this same fluid was met with again in the ventricle of the septum. The fourth ventricle was comparatively less dilated than the preceding; there were no granulations on the inferior surface of this ventricle, but a yellowish plastic deposit near the fissure of Bichart, behind the pineal gland; there was adhesion of the lyra to the isthmus of the encephalon. The grey substance of the brain appeared intact except as regards colour. The brain was cut into thin slices horizontally and there were seen in the white substance, particularly at a short distance from the grey substance, yellowish spots or rather masses of about one centimeter in extent, formed of numerous granulations mostly fatty, of nuclei and granular cells, and of an amorphous and granular matter; these masses were equally distributed in both hemispheres of the

brain. On the surface of the right corpus striatum was a yellow patch, about two centimeters in diameter, slightly prominent; the brain substance, softened in this neighbourhood, formed a sort of yellowish white magma. On cutting through the corpus striatum and optic thalamus of the same side, a greenish yellow tint was observed in places. The corpus striatum of the opposite side was the seat of a mass of less extent than that of the yellow masses, but, like the latter, formed almost exclusively of abundant molecular and fatty granulations and also of granular globules; nowhere did any traces of hæmatine exist. In several parts of both the grey and the white substance were seen collections of fatty granules. These were most numerous in the course of the vessels. Some of the convolutions of the cerebellum were of a yellow colour and somewhat soft. The pituitary body was large, firm, and yellowish; there was no change at the origins of the cranial nerves. There was abundance of serum in the vertebral canal; the spinal cord was not examined; some of the lumbar vertebræ were the seat of hyperostoses.

Thorax.—There was some turbid fluid in the pleuræ; there were membranous adhesions between the lungs and thoracic parietes. The apices were healthy; some lobules in the anterior part of the base of the right lung were indurated and the corresponding bronchi were dilated. In this neighbourhood were found some fibrous tissue and plastic elements.

The heart was soft and fatty.

Abdomen.—The liver was small and slightly granular on its surface; there were some milky patches in the vicinity of Glisson's capsule and multiple cicatricial furrows on the surface of the organ. Few in number on the right lobe, except towards its lower edge, the cicatrices were much more abundant on the lesser lobe, and especially in the neighbourhood of the suspensory ligament; they ran in a horizontal or vertical direction and formed furrows of greater or less depth, the edges of which were generally united by means of cellular bands. The parenchyma of the liver was slightly resistant when cut into and creaked under the knife; the fibrous tissue appeared to be more abundant than natural in it; a great number of the hepatic cells contained fatty granulations.

The spleen creaked under the knife; it was enlarged, firm, and resistant. The prevertebral glands were for the most part increased in volume on section, they presented a whitish colour and medullary consistence. The thyroid body was hypertrophied.

The kidneys were enlarged; the fibrous covering was opaque and difficult to remove. The external surface of the organ was granular, or rather studded with a large number of small depressions, which rendered it very uneven. On section, the cortical substance presented a marked yellowish tint; the tubular portion was brownish. Some of the Malpighian corpuscles were enlarged, others smaller and circumscribed by a web of thickened conjunctive tissue; in the interior of the canaliculi existed numerous granulations and destroyed epithelial cells.

The mucous membrane of the bladder was brownish and thickened; the Fallopian tubes were adherent to the uterus. The ovaries were atro-

phied and fibrous; their covering was whitish, thickened, and resistant. The stomach and intestines were healthy.

The veins of the extremities, the cerebral sinuses, and the pulmonary artery were free. The aorta was the seat of some yellow patches in the neighbourhood of its upper curvature; the left internal carotid artery was partly obliterated near the cavernous sinus, by a membrane which terminated in a point and adhered closely to the wall of that vessel. This membrane, which was formed of nuclei and of cells of conjunctive tissue more or less changed, presented at some points a rusty colour due to the presence of numerous grains of hæmatine and crystals of hæmatoidine. The walls of the artery were not atheromatous at that point. In the right carotid was a coagulum which, adherent at both ends, obstructed only a small part of the calibre of the vessel; it was composed of fibrine, nuclei, and cells of conjunctive tissue.

General paralysis and paralytic dementia are thus, in certain cases, symptomatic forms undoubtedly connected with syphilis. To the cases which we have just quoted it would be possible to add several others, although, in reality, the forms in question are comparatively rare. A patient observed by Rauch, of Grätz,* complained first of continuous cephalalgia; he became forgetful, lazy, inattentive to his business, silly, then fell into a childish condition and finally into complete idiocy: sight and hearing, weakened at first, were afterwards entirely lost. The lower extremities, the bladder, and the rectum became paralysed and, lastly, coma supervened. This condition, which had commenced more than six months before, yielded completely to the employment of mercurial inunction and of iodide of potassium internally. A patient treated by Read, of Dublin,† could not keep his feet; he articulated very imperfectly, the arrangement of his ideas was very defective as was also his memory, and sight on both sides was considerably affected, and this whole train of symptoms yielded in three weeks to the employment of mercurial frictions upon the shaven hairy scalp. Hughes Thompson, of Glasgow,‡ also saw a case of paralysis which gradually became general and was rapidly relieved by iodide of potassium. Analogous cases have been quoted by Cirillo, Delpech, Sandras, &c.§ The first case in

* Quoted by Lagneau, junr., *loc. cit.*, and [Ladreit de la Charrière. Thèse de Paris, 1861, p. 56.

† *The Dublin Quarterly Journal of Medicine*, February, 1852.

‡ *Journal des connaissances méd. de Caffé*, Oct. 20th, 1857, p. 17, from the *Lancet*.

§ See these observations in the various works of Lagneau, junr., Ladreit de la Charrière, and Gros and Lancereaux.

Goodwin's memoir* deserves to be placed with the preceding, as also an interesting case given in Zambaco's work,† in which the post-mortem examination revealed the existence of softening at the periphery and of a tumour which was probably nothing else than a gummy tumour.

Gailleton relates cases which come in properly here. A man contracted syphilis; on two different occasions he had constitutional symptoms; two years later, he presented a paralysis of the levator palpebræ on both sides, diplopia, and amblyopia, and this man, who was previously intelligent, became almost idiotic. He scarcely answered to questions, his speech was embarrassed, and his gait tottering; he recovered by the use of iodide of potassium.

A woman 34 years of age, after having had, on two different occasions, secondary symptoms, suffered from nocturnal cephalalgia of the most violent kind. There were a progressive decrease of intelligence, melancholy, and hallucinations. These symptoms, which were little marked in the daytime, attained their maximum of intensity during the night. They, as well as the pains in the head, yielded rapidly to the employment of iodide of potassium.‡

Lastly, Leidesdorf§ saw, in syphilitic subjects, two cases of dementia which were, the one very sensibly improved, the other rapidly cured by iodide of potassium.

It would be easy to recall here cases of dementia, or even of mania, equally connected with syphilis. But these cases are not of a sufficiently positive stamp. Professor Griesinger|| admits, however, that the mental derangements connected with syphilis present themselves under forms varying from the most violent mania to the most complete idiocy. Very recently, Dr. Berthier,¶ a very distin-

* The title of this observation is: *Syphilitic affection of brain; impairment of memory and mental power; attacks of great exhaustion; slight paralysis.* *The Lancet*, July 19th, 1862.

† *Loc. cit.* Obs. LV. p. 331. Compare Arthaud, *Gaz. méd. de Lyon*, 1858, p. 347.

‡ Gailleton, *Sur trois cas de syphilis constitutionnelle compliqués de symptômes nerveux* (*Gaz. méd. de Lyon*, October 16th, 1864).

§ *Contribution à la syphilis cérébrale dans ses rapports avec l'aliénation mentale* (*Méizinische Jahrbücher*, 1864, 4^e livr.).

|| *Archiv der Heilkunde*, 1863, p. 471.

¶ *Du délire lié à la goutte, au rhumatisme, à la syphilis et aux dartres*, dans *Union méd. de la Gironde*, May, 1865, p. 211.

guished psychiatric physician, has sought to refer to syphilis several forms of madness, such as certain varieties of delirium, mania, &c.; but the very incomplete facts upon which he relies are far from appearing conclusive. To sum up, certain syphilitic lesions of the encephalon may produce a totality of symptoms very closely resembling the morbid conditions known under the name of general paralysis and paralytic dementia; we must, perhaps, also admit syphilitic mania. At all events, it is important to bear in mind that the course and evolution of these manifestations are altogether peculiar and different from what is observed when syphilis does not exist.

Side by side with the derangements which always accompany a material lesion, let us point out a moral derangement which appears to attach itself by preference to the general modification of the organism. Sometimes, in syphilitics, the moral condition undergoes a very evident change, comparable, to a certain extent, to an analogous derangement met with in other morbid conditions, in gouty subjects, for example. Low spirits and timidity form the basis of the character of individuals thus affected; what they especially fear are the manifestations of the disease with which they are affected; they may be said, therefore, to be suffering from syphilophobia.

This condition has been remarked and studied by several observers; but Bru has given the most graphic picture of it, though perhaps a little exaggerated. "There present themselves at the hospitals," says that physician, "many patients affected with syphilitic mania. It is necessary to satisfy them by making them undergo some mild treatment, but with a great appearance of importance, for the purpose of quieting them. . . . There are several degrees of syphilitic mania; some patients are furious; these are, in general, much alarmed at their own condition; some are less alarmed; others lastly, though convinced that they have the disease, do not concern themselves about the consequences, because they think that when once the disease has been contracted, it can never be got rid of, whatever may be the treatment opposed to it. . . . I have known several men affected with this moral disease, who believe that they had all the diseases mentioned in books: a dimness of sight, a buzzing in the ears, the slightest pain or headache, were all, for them, certain signs of syphilis."* Such are the affections of the

* *Méthode nouvelle de traiter les malad. vénér.*, t. ii. Paris, 1789.

second group. To a third group would belong, lastly, a series of symptoms connected more especially with the presence of gummy products in the encephalon. Headache more or less violent and persistent, giddiness, vertigo, sudden loss of consciousness or attacks analogous to apoplectic attacks, sometimes somnolency or mere drowsiness, and delirium or coma, are the chief symptoms observed, accordingly as the tumour acts as an irritant body or by its size compresses the hemispheres. One character proper to these various symptoms is a mobility and transient nature not met with under any other circumstances. Clonic convulsions or epileptiform attacks are then frequently observed; contraction is a less common phenomenon.

Amongst the convulsive forms, it is well to point out chorea, which occupied one entire half of the body, in a case given by Costhiles and in another observed by myself at the Hôtel-Dieu under the care of M. Legroux.* In this latter case, the hemichorea followed upon hemiplegia treated for some days with calomel. At other times, mere trembling is observed, as has been pointed out twice by Schutzenberger. Lastly, in some patients, the only appreciable symptom was a tendency to perform gyrating movements or movements as in riding, as Neumann† saw in one case, or the incapability of walking in a straight line, of which examples are to be found in the excellent work of Lagneau, and which appears indicated by the following case:—

Tubercular and gummy syphilide.—Multiple cerebral derangements.

OBS. L.—B., æt. 39, entered the Hôtel-Dieu under the care of Professor Grisolle, June 21st, 1862. Of moderate strength and a good constitution, he had never had any serious disease, and asserted that he had never had any venereal affection or any lesion of the genital organs. It was to the use of a pipe that he attributed the symptoms which induced him to come to the hospital. Two years ago, he had an affection of the throat, the exact nature of which he was unable to describe. Three months ago, he became the subject of an eruption, which still exists, and which presented itself in the form of pimples or tubercles arranged in a circle, of a coppery tint and occupying pretty symmetrically the posterior parts of the thighs, the groins, and the region of the kidneys. This eruption was also observed

* See Gros and Lancereaux, Obs. LIX and CLIX.

† Neumann, in *Wien. med. Halle*, iv. 2, 3, 1863, and *Schmidt's Jahresb.*, t. 119, p. 166.

upon the arms, in the popliteal spaces, and upon the glans. On the posterior surface of both fore-arms, at about two centimeters' distance from the olecranon, were seen two rounded tumours, pretty firm and movable, of the size of a small nut. There was slight exostosis of the left clavicle. The tibiæ were intact. For about six weeks he had had vertigo, giddiness, intense headache and obstinate insomnia; then, all at once, more violent accessions of vertigo, followed by loss of consciousness, without convulsions. The same symptoms recurred and he was bled; then supervened hemiplegia of the left side. The patient then determined to come into the hospital. The paralysis, which was very incomplete, did not prevent him from walking; but the patient pointed out that, in walking, he always inclined involuntarily towards the left. He was enabled to reach the hospital on foot, he stated, by taking the left trottoir, the only one upon which he could remain. Although the mouth appeared slightly distorted, the hemiplegia of the face was, however, very doubtful. Since the last attack, his speech had been embarrassed, his memory treacherous, his intelligence diminished and his expression heavy. There was no fever. The movements of the heart were dull and irregular; there was extensive precordial dulness; the liver appeared healthy. There was a yellowish colour of the skin. The diagnosis of the cutaneous affection not being subject to any doubt, despite the denials of the patient, there was reason to believe that the cerebral derangements depended upon a lesion having the same origin; such was the opinion of a great number of physicians, and of M. Grisolle in particular, who ordered a specific treatment (iodide of potassium and Dupuytren's pills).

In a few days, the embarrassment of speech diminished, together with the headache, the vertigo, and the paralysis of the left side; but at the same time, the right arm became paralysed. The treatment was continued.

On the 27th, the patient had more power over the left side, but he dragged the right leg, which was more feeble, in walking. The dose of the iodide of potassium was increased to forty-five grains.

On the 28th, the gummy tumours of the fore-arms were becoming absorbed, and the eruption was fading; the same treatment was continued. The syphilide gradually disappeared, without leaving any trace, the tumours of the fore-arms also yielded, and the exostosis decreased. The cerebral symptoms afterwards diminished, and had disappeared almost entirely when the patient went out, July 11th.

We have endeavoured to point out the numerous derangements which correspond to the syphilitic lesions of the encephalon, but it would be erroneous to suppose that we should find, in all the cases, one or other of the groups of symptoms described above. While it is not uncommon to meet with the coexistence of the various lesions of which we have spoken, it is not rare to meet simultaneously with the various derangements just enumerated; the following case is an instance too important to be passed over in silence.

Syphilitic infection.—Exostosis.—Clonic convulsions, headache, melancholy, hemiplegia of left side, insomnia, epileptic attacks, delirium and coma.—Adhesion of dura mater to brain.—Diffused induration and softening of cerebral substance.

A merchant, 46 years of age, of sober habits, had gastric fever in the course of the month of March, 1859, and, during his convalescence, was seized with clonic convulsions without loss of consciousness. These convulsions, which commenced in the muscles of the tongue, afterwards passed to those of the lower jaw and left eye. From the 13th of March to the 10th of June, this patient counted eleven attacks somewhat weaker than the first and which were distinguished by a rotation of the head towards the left. On the 10th of June, he had convulsions in the left leg; he fell down, but did not lose consciousness. In the interval, there existed a slight trembling of almost all the muscles of the face, and at the same time almost continual dragging pains in the head, especially in the neighbourhood of the right parietal bone. His sleep was bad, his spirits much raised or depressed. It was under these circumstances that the patient came into the hospital, presenting the ensemble of symptoms appertaining to chronic pachymeningitis. It was ascertained that, two years previously, he had had a painful tumour upon the right olecranon, from which there still remained a considerable enlargement of bone. He admitted having had syphilitic disease for several years. The organs of digestion being in a good state, recourse was had to inunctions with mercurial ointment. Some days after, there was exacerbation of the pains in the head, for which some blood was taken away locally. Inunction was made daily without producing salivation, but at the end of three weeks, anorexia and nausea supervened.

The treatment was suspended at once and resumed some weeks later; but, the gastric derangements having returned, the treatment was stopped altogether. At that period there was a decided improvement in his condition, the headache, trembling and convulsions having ceased. The patient, who continued to be timid, still got but little sleep. He made arrangements to go to Wiesbaden, when he was seized with sudden anxiety and refused to undertake the journey. From that moment the anxiety returned and the melancholic depression persisted. The pains in the head and convulsions were still absent, but from time to time the muscles of the face were affected with trembling and he had a feeling of uneasiness in the precordial region.

Towards the end of the month of November, his condition became aggravated; there was weakness and insomnia. December 6th, the pains in the head reappeared at the same points, and some hours after there was transient loss of consciousness, followed by paralysis of the whole of the left side. This paralysis soon decreased, but did not cease entirely the patient cried frequently, had headache and more marked trembling of the muscles of the face. He was ordered iodide of potassium and cautery in the nape of the neck, but without success.

In 1860, he had epileptic attacks with complete loss of consciousness,

the hemiplegia persisted, and sometimes convulsions were added. His intellect, which was intact, was soon fatigued. He was almost unable to make calculations since the last attack. Such was his condition during that winter and the summer of 1860.

In January, 1861, erysipelas developed itself, having for its starting-point the cauterised spot, and which, after having invaded the whole of the head, ended by spreading to the trunk of the body. In February this erysipelas ceased, but the skin which covered the sacrum and left olecranon became gangrenous; the parts which had been the seat of the erysipelas continued oedematous; there was extreme emaciation, delirium and violent cough without any appreciable lesion in the chest. On the 2nd of March, coma suddenly supervened and death occurred the same afternoon.

Post-mortem examination.—The right parietal bone was, on its internal surface and to the extent of a two-franc piece, spongy and vascular, and at this same point, the external surface of the dura mater was covered by a villous false membrane. The dura mater was adherent, to the extent of a five-franc piece, to the pia mater and cortical layer of the brain. The mass which caused this union was, towards its middle part, solid, consistent, dry, and elastic; it dipped in between the convolutions, where it formed three conoid excrescences. These excrescences were partly indurated and yellowish, partly transformed into a granular pulp. The medullary substance in the vicinity, which was very hard, threw out callous prolongations as far as the centrum ovale, and contained a small, firm tumour of the size of a plum-stone, greyish at its periphery, dry and yellow at the centre. The medullary substance of the right hemisphere, of a lemon-yellow colour, softened in appearance but in reality firmer than usual, was traversed by a callous tissue; in the vicinity of this change, some spots of softening were found, which occupied more especially both sides of the fossa of Sylvius. There existed a small quantity of fluid in the lateral ventricles, the ependyma of which was thickened.

The liver was small and there was atrophy, chiefly of the left lobe. In the vicinity of the round ligament there existed a callous cellular tissue, without yellow nuclei. The spleen was soft. The other organs did not present any appreciable change. There was ulceration of the skin covering the olecranon (Tüngel).

In this case are observed the chief derangements pointed out above. The coexistence of these derangements, the alliance of paralysis with convulsions or contraction, and headache more or less severe, are circumstances which, even independently of any concomitant symptoms, may put us upon the track of syphilis, for they are not usually observed in other diseases. Headache, insomnia, weakness of memory, paralysis of some of the motor nerves of the eye, and strabismus with derangements of vision are frequent symptoms

in such cases, and most commonly accompanied by a more or less marked state of cachexia.

The cutaneous sensibility may be exaggerated or diminished ; but nevertheless, the changes which it presents are rare, so that their habitual absence may sometimes assist the diagnosis. To sum up, if the symptomatic derangements which correspond to the syphilitic lesions of the brain are numerous and varied, this depends partly upon the extent and partly upon the seat of those lesions. In this latter point of view there is one symptom little common which is to be pointed out: this is *aphasia*, otherwise termed the loss of the memory of words. Professor Schutzenberger* and Melchior Robert † have each had one opportunity of observing this phenomenon, which we have ourselves seen in a single case. Further observation will no doubt enable us to recognise it more frequently.

When the cerebellum is more especially the seat of the anatomical localisation, the symptomatic manifestations most common are nausea, vomiting, movements simulating those of intoxication, a tottering gait, ‡ spasms of the muscles of the face or eye, and sometimes derangements of vision. We have examples of most of these derangements in the following cases :—

J. S., six months ill, complained of pains shooting through the head and appearing at two o'clock in the morning ; he sometimes had spasms of the muscles of the face. He had nausea and vomiting. Copious and repeated bleedings, purgatives, and mercury did not bring about any improvement : the pains became distinctly intermittent and returned every other night. He was ordered forty drops of liquor arsenicalis. Death occurred suddenly.

At the post-mortem examination were found congestion of the vessels of the pericranium and brain ; a large quantity of fluid in the ventricles ; coagulable lymph in the ventricles and upon the corpora striata ; and in the right hemisphere of the cerebellum, a schirrhous tumour, of the size of a small nut, of cartilaginous consistence, in contact with the occipital bone, in which it had produced a commencement of absorption. (Ward, *Nouv. Bibl. méd.*, t. iv. p. 368.)

A woman 31 years of age, who had had an indurated chancre, mucous

* *Gaz. méd. de Strasbourg*, 1850, p. 200.

† *Traité des maladies vénériennes*. Paris, 1853, p. 385.

‡ See observations by Hillairet and Greppo, Gros and Lancereaux, *loc. cit.* pp. 272 and 273. Gailleton, *Gaz. méd. de Lyon*, October 16th, 1864, Obs. II.

patches, &c., entered the Lariboisière Hospital under the care of Dr. Duplay, having upon her upper extremities a very characteristic pustular syphilide. For several weeks this patient had complained of very violent occipital cephalalgia, with obstinate vomiting, and iodide of potassium, which had been given to her, had had no effect upon these symptoms. She soon grew weak and began to totter; walking became more and more difficult and, in the beginning of March, 1863, she was obliged to keep her bed. In this condition, she could still carry out movements in every direction with the lower extremities in a preconceived direction; she was able to co-ordinate her movements; there was no paralysis properly so-called discoverable, but extreme muscular debility; the upper extremities were in a similar condition to that of the lower; there was muscular debility, but the power of co-ordinating the movements was intact. At the same time with the diminished mobility of the limbs appeared convergent strabismus which increased to such an extent that the two eyes partly disappeared behind the eyelids, giving the patient a hideous appearance. The strabismus was at first complicated with diplopia. Under the influence of the will, the patient could react partly against the strabismus and draw the eye outwards, but with difficulty. There existed here also, not paralysis, but a derangement in the locomotive system of the eye. Intelligence and sensibility had not been touched in this list of serious symptoms, and the other functions had equally remained intact. There was neither fever nor cough; nutrition had been seriously affected by the prolonged vomiting; the patient had become emaciated. A mercurial treatment (two of Sédillot's pills daily) was begun the first week in March, and at the end of a week there was already a decided improvement; the pains in the head were relieved, the vomiting decreased; then the other symptoms gradually yielded; the patient regained her strength and could soon sit up in bed, and stand upon her feet; the strabismus also yielded, and after six weeks of the mercurial treatment, in April, 1863, the pains in the head and vomiting had disappeared. The patient, who had recovered the power of motion, quitted the hospital cured of the strabismus and able to walk easily. The recovery was permanent. (Leven, *Bulletin de la Société de Biologie*, year 1863, p. 150.)

Another symptom which it is important to point out here and which is not very rare, is the appearance of sugar in the urine, so as to constitute a kind of diabetes, as has been observed by Leudet, Jaksch, and Düb.* In the following case, which we owe to the

* See an observation by Leudet, *Moniteur des sciences méd.*, 1860, p. 1189. Jaksch, *Ueber die durch Syphilis bedingten Lähmungen*, in *Allgem. Prager med. Wochenschrift*, 44-52, 1865. Düb, in *Vierteljahrsschrift für die praktische Heilkunde*, t. lxxvii; two cases of diabetes mellitus with syphilitic manifestations, and cured by a specific treatment.

kindness of our friend Dr. Gentilhomme, of Rheims, there was, at one and the same time, both polydipsia and polyuria.

Chancres and buboes in the groin in 1834 without secondary symptoms ; hemiplegia cured by iodide of potassium.—Multiple gummy tumours ; polyuria.

OBS. LI.—D., æt. 54, entered the infirmary of Bicêtre in the month of December, 1860, for gastric derangements simulating organic disease of the stomach.

Antecedents.—This patient stated that he had had chancres on the glans in 1834, accompanied by a bubo in the right groin, which terminated in suppuration.

When examined on admission, a very evident cicatrix was found in the groin. From these chancres no secondary symptoms resulted, at least after a sojourn of two months in the Hospital du Midi. No trace of symptoms was found either in the throat, on the skin, or about the anus, which could give the idea of syphilitic manifestations. In 1837, D. fell from the sixth floor into the street, alighting upon a hay-cart. Taken home in a state of unconsciousness, he soon came to his senses and recovered rapidly from a dislocation of the right shoulder and a fracture of the clavicle.

He resumed his work, and some time afterwards was seized with hemiplegia of the right side, which came on slowly and progressively, without cerebral derangements. There existed, at the same time, very acute pains in the right side of the head, the same side as the paralysis of the limbs. For more than a year, D. was under treatment in various hospitals in Paris, but without benefit. Placed at last under the care of M. Boyer, he recovered rapidly under the influence of treatment with iodide of potassium. He returned to his work, but was again prevented continuing it after some time by a fresh paralysis, occupying this time the left side of the body. In other respects this paralysis ran the same course and was accompanied by the same symptoms as the first, but did not disappear, and D. was sent into the Bicêtre Hospital for this infirmity. Since then, this hemiplegia almost entirely disappeared under the influence of iodide of potassium.

Later on, this patient presented a very remarkable series of symptoms. First, three years ago, he had gummy tumours, in the lobe of the right ear and in the sub-cutaneous cellular tissue of the right thigh and knee, for which M. Desprès gave him iodide of potassium. Some of these tumours disappeared by resolution; others, on the contrary, underwent softening. Those which had their seat in the lobe of the ear ended by completely destroying that appendage. Those which were situated in the leg left behind them small fistulæ which are still visible on the internal surface of the tibia. The gummy tumours were of the size of small nuts, and were the seat of acute pains during the night.

Present condition (April, 1861).—The patient keeps his bed. He is very

feeble and greatly emaciated, and his general appearance indicates a very advanced state of cachexia. The skin is pale and somewhat yellowish. The mucous membranes are pale and discoloured.

Eight months ago, he began to feel more thirst than usual. He drank nearly three quarts of tisane daily; this want has continued to increase, and he now takes about three quarts and a half daily and passes urine in proportion. The gums are soft and bleed; the teeth, spoiled and uncovered, are frequently the seat of very acute and very persistent pain. The breath is foul, the tongue red and burning; swallowing is difficult, but there is nothing abnormal to be seen in the throat. At the commencement of the disease, the digestive functions were performed very regularly, but soon became deranged. The appetite gradually decreased. Digestion became difficult and even impossible. Immediately after taking a little food, the patient felt pain in the stomach and behind the sternum, he had a choking feeling and strange sensations which he compared to compression of the stomach with a bar, and an inclination to vomit almost always followed by actual vomiting; the pains did not cease until the whole contents of the stomach had been ejected.

The belly was large and there was generally constipation, but sometimes colic and diarrhoea. The abdomen was painful over its whole extent, but chiefly in the middle of the right hypochondrium. There was meteorism in the left hypochondrium, in the neighbourhood of the stomach, and distinct dulness downwards as far as a horizontal line which would pass a little below the umbilicus. To the extreme left of the right hypochondrium, the liver did not project beyond the border of the false ribs. The dulness indicative of the presence of the liver was prolonged far up into the chest.

Palpation revealed in the neighbourhood of the epigastrium a tumour with a sharp edge, already indicated by percussion.

In the chest were observed the following phenomena: the cough commenced six months ago, from which time it has always gone on increasing. At present it is very frequent and accompanied by an expectoration of yellowish frothy sputa. The cough prevents the patient from sleeping. He has never had hæmoptysis.

The patient complains of pains in the chest, resembling by their characters and seat intercostal neuralgia. These pains are very acute, especially in the right side of the chest and in the vicinity of the vertebræ. They are evidently increased by pressure. In the parietes of the chest are felt nodosities of hard bodies, which are probably seated in the thickness of the muscles. The right subclavicular fossa is little marked. Resonance is abnormal on both sides. In front, the breathing is loud and harsh; behind, some bronchial râles existed on both sides of the chest.

There was nothing abnormal about the circulation. As regards the urine, merely an increase in quantity was observed: seven pints a day. The urine, examined on several occasions, never presented any trace of sugar or albumen. As regards the nervous system, the patient complained of very acute headache, which showed itself chiefly during the night. This pain was superficial and presented the characters of neuralgic

pain. Its existence was very probably to be attributed to the presence of very numerous exostoses situated in the bones of the skull. These exostoses were small and very little prominent; they were very appreciable to the touch and even by the eye.

The intellectual functions were very perfect. There was slight hemiplegia on the left side, accompanied by some anæsthesia in the leg. This hemiplegia, which was almost complete when the patient was admitted at Bicêtre, decreased greatly in consequence of an antisypilitic treatment to which he was subjected for the gummy tumours, exostoses, pains, &c.; but the paralysis had not yet disappeared entirely. There was no other phenomenon to be remarked on the part of the organs of the senses.

As regards the skin, the lobe of the right ear was entirely destroyed. There existed several ulcerations covered with crusts on the internal surface of the right knee. Near the ulcerations some whitish cicatrices were observed. All these lesions were consecutive to small painful tumours, the size of small nuts, which had become transformed into pus.

The condition of the patient grew steadily worse. The emaciation increased daily. There was constant vomiting and intense thirst. The patient was tormented by pains which did not allow him a moment's rest; the cough became more frequent. A little fever supervened, at first towards evening, then it became continuous. The patient died on the 20th of April, with all the symptoms of broncho-pneumonia.

The *post-mortem examination* was made twenty-four hours after death.

Encephalon.—On the frontal bone were found flattened protuberances of irregular form and varying size; the largest did not exceed the size of a half-franc piece. Their surface was smooth, but devoid of polish. Some of them projected to a considerable extent; these latter were irregular and wrinkled on their surface. The pericranium covering these exostoses was easily detached. In the midst of these very numerous exostoses there were seen upon the bones of the skull bluish spaces into which a scalpel could easily be pushed. At these points the osseous tissue was found to have disappeared and to have been replaced by fibrous tissue mixed with vessels. These bony ulcerations penetrated to the diploë. The periosteum was thickened at the points corresponding to the changes in the bones and easily detached.

On the internal surface of the cranium, the dura mater adhered to that portion of the frontal bone which corresponded to the changes in the external surface of the bone; on removing it, the same changes were observed as those existing on the surface of the bone. The depressions were very irregular both on the internal and external surface. The smaller ones were starlike, the larger ones varied greatly in form. Their size did not exceed one centimeter and a half in any direction. Around these depressions and over a large extent of the vault of the cranium, the bone was studded with points and furrows, which gave to its surface the appearance of a section of a testicle.

The brain, which was examined with great care, was found to be perfectly healthy in all its parts. At the base of the skull, the dura mater came away easily. No tumour existed, either in the bones or in the

fibrous coverings. The spinal marrow, nerves and organs of the senses were not examined.

Organs of respiration.—The thyroid body presented a very remarkable change in its texture. Its volume was neither augmented nor diminished, its consistence was very firm and very resistant, but at the same time much more friable than usual. Its colour was somewhat yellowish and its section surface shining. It presented, in a word, an appearance which might be compared to that of bacon slightly coloured with blood. The trachea and bronchi were healthy. In the lungs, adhesions existed on both sides. There was hepatisation at the base of both lungs and congestion throughout the rest of their extent; at the apex of the right lung was observed a mass the size of a nut, situated superficially; this mass was very hard and presented the appearance of marble on section. There were seen in it some black parts separated by brilliant lines which appeared to be formed of fibrous tissue. This part of the lung was completely impermeable to air. At the base of the right lung was an effusion of pus circumscribed by adhesions. At the roots of the lungs, the bronchial glands, which were hypertrophied, indurated, and blackish, contained in their substance deposits of a yellowish matter, solid in some, softened in others, and resembling pus. These deposits presented the most perfect resemblance, as regards external appearance and elementary composition, to gummy tumours in their different stages of induration and softening.

Alimentary canal and its appendages.—The stomach, which was full of fluid, was slightly dilated; the matters contained in it passed with difficulty through the pylorus. There appeared to be a narrowing at this point; the valve appeared more prominent than natural and thickened. The mucous membrane, which was healthy, was easily removed; beneath it was found a highly developed muscular ring. The mucous membrane of the small intestines and a part of the large intestine was blackish and softened, especially in the neighbourhood of the ileo-cæcal valve. The numerous lymphatic glands which receive their vessels from this part of the intestines were hypertrophied; they contained in their interior encysted masses, resembling deposits of pus. This change was exactly the same as that in the bronchial glands.

The liver presented a very remarkable appearance externally. The right lobe was somewhat smaller than in the normal condition; the left lobe presented at its upper part a small tumour of the size of a pea, which was yellowish and wrinkled on section, and friable in consistence. Its appearance was exactly the same as that of the pathological products in the bronchial and mesenteric glands. On the convex surface of the liver there were several analogous tumours, smaller than the preceding, being about the size of a millet-seed. In the same neighbourhood was seen a puckered cicatrix, running from before backwards, from the gall-bladder to the posterior part of the organ, seven centimeters in length; whitish, fibrous, and depressed, this cicatrix was of great thickness, viz., a centimeter or more. It adhered by the middle portion of its length to a voluminous and strong mass situated in the substance of the liver. This mass

was of the size of a large walnut; its form was rounded, but very irregularly; its surface was very uneven. It consisted of two halves, which moved upon each other. Its colour was whitish and its hardness such that it was impossible to attack it with the scalpel. This mass adhered very closely to the substance of the gland. Around this stony mass, the liver was hard and as it were fibrous at certain points; in other places, it contained small yellowish tumours, about the size of millet-seeds, pressed against each other and closely resembling those which existed on the surface of the liver. The inferior surface of the liver did not present anything abnormal; the gall-bladder was healthy and filled with greenish bile. The hepatic tissue itself appeared to be perfectly healthy.

Organs of circulation.—The pericardium, which appeared healthy, contained in its interior five or six spoonsful of purulent serum. The heart was large and very firm. There was no lesion of the orifices, but the muscular substance itself was greatly changed. On section, it appeared smooth, shining, discoloured, yellowish, and lardaceous. The muscular fibres of the heart presented a close resemblance in appearance to the thyroid body. Under the microscope, the muscular fibres were easily recognised, but they were infiltrated with a great quantity of granulations.

Kidneys.—The kidneys were of the natural size, but they had undergone a singular change: they were mammillated on their surface and traversed by furrows. The secreting portion was of a lardaceous, yellowish appearance. The supra-renal capsules themselves contained deposits of yellowish matter, of the size of a millet-seed, some hard, others softened. All these deposits resembled each other, differing only in size.

The polyuria symptomatic of a syphilitic localisation in the encephalon is sometimes simple, sometimes accompanied by glycosuria or albuminuria. It existed at the same time as a large quantity of albumen in the urine of a patient of whose case the following is an abridged history:—G., æt. 30, perceived on the 15th of August, 1865, that he had contracted a chancre on the prepuce. He took, at that time, twenty pills and Van Swieten's drops for three weeks. At the end of October, he went into the Hospital du Midi, where the chancre was excised. Cicatrisation took place with difficulty. He went out in December, after having taken iodide of potassium for twenty-five days and some fresh pills. During his stay in that hospital, he had cervical adenopathies, angina, and iritis. His general health remained good until June, 1866, despite occasional excesses in drinking. In the early part of June, rupia supervened, which invaded the extremities and trunk, and for which he had, in the Hospital St. Louis, vapour and sulphur baths. The eruption became cicatrised towards the end of August; in September, he lost

strength, and had œdema of the legs. On the 7th of September, this patient entered the Hospital St. Antoine, under the care of M. Lorain, who had the kindness to give me notice thereof. Large mottled cicatrices were spread over his body, the legs were œdematous, and his urine, which was copious and frequently passed, contained albumen. He had persistent headache, with nocturnal paroxysms, insomnia, giddiness, and frequent nausea. The liver, lungs, and heart appeared free from disease, but there was slight anæmia. He was ordered iodide of potassium and mercury, with quinine wine. On the 17th of September, he had an epileptiform attack, and had six accessions in the course of half an hour, fresh accessions in the night, and delirium. Consciousness returned the following day, but his memory was weak, his sight affected, and there was slight hemiplegia of the right side. There was no vomiting or bad taste in the mouth, but oppression and some râles in the chest. For several days, the pulse remained at 108 and the life of the patient was in danger. Nevertheless, the treatment was continued without interruption and at the end of October recovery appeared insured, and the patient left the hospital, having no longer either œdema or albuminuria. His intellect was clear, his strength had returned, and he purposed soon resuming his usual occupations.

That syphilis was the cause of the symptoms observed in this patient is a point which it is impossible to doubt. What may be disputed is, the correlation of these symptoms and above all, the existence of a connection between the albuminuria and the nervous derangements. There is reason to believe, however, that the albuminuria was dependent upon the nervous lesion, without which it would be difficult to explain its rapid disappearance.

The course of the syphilitic affections of the encephalon is slow and progressive. Headache, insomnia, vertigo and giddiness are generally the first symptoms; later on supervene convulsive attacks, paralysis, and derangements of the intelligence. These last symptoms only appear at an advanced period, like the derangements of sensation, which are rare however.

After a longer or shorter period, syphilitic encephalopathies become stationary or gradually improve. Their duration varies from some weeks to several years. Their spontaneous cure is rare, but in general they rapidly feel the influence of specific treatment; their complete disappearance is only possible, however, when the nerve

elements have retained their integrity. But, as these elements almost always end by becoming changed after a certain time, it follows that certain symptoms sometimes persist indefinitely, and amongst these symptoms may be placed, above all, paralysis. Astruc had already recognised the difficulty of curing syphilitic paralysis, but he did not know the reason of it.

Cases proving this difficulty are not very rare. We could give several instances of these difficult or even impossible recoveries, which had at first promised most favourably; but we shall content ourselves with quoting a single one, given us formerly by a distinguished physician of Tongres, who desired our opinion concerning it.

· Obs. LII.—X., a brewer, æt. 69, of a strong constitution, had always enjoyed good health when, at 32 years of age, he had a syphilitic affection which he could not describe exactly. He knows that he had chancres, for which he took a large quantity of mercury. About a year after the first lesions, he was attacked by paralysis of the motor muscles of the right eye and blindness. These symptoms quickly disappeared, but soon afterwards he felt weakness of the lower extremities, and then had partial paralysis of that part of the body. Blisters, moxas, sulphur baths, ergot of rye, and strychnia, &c., were employed successively, all which remedies were without effect. The paraplegia continued, and violent pain in the left foot had rendered this man's life very miserable for the last thirty years. Iodide of potassium was ordered, to the extent of fifteen grains daily at first, and increased successively up to thirty-seven grains and a half. During the first eight days, there was a marked improvement; but the medicine was afterwards borne badly, its effect soon diminished and the improvement did not continue.

In this case, and in many others of the same kind, the long duration of the disease sufficiently indicates that the change had finished by reaching and destroying the nerve elements, and thus rendering a complete cure no longer possible. The change or even the destruction of a greater or less number of these elements by the contact of the syphilitic neoplasm is, then, the invincible obstacle. The derangements resulting from excitation or compression disappear; but those which, like paralysis, are connected with the anatomical modification of the cells and nerve tubes, necessarily continue. It is a phenomenon of the same kind as that observed in cerebral hæmorrhage, in which the clot of blood tears and compresses at one and the same time the nerve elements.

Lastly, death may be the consequence of syphilitic lesions of the

encephalon when they are extensive, or when, being circumscribed, they occupy a part such as the medulla oblongata, the integrity of which is essential for the maintenance of life. There are cases also in which epileptiform attacks, which had previously presented little danger, suddenly become redoubled in frequency and are followed by coma and death, although the post-mortem examination does not always reveal the cause of this sudden and rapidly fatal termination.

Diagnosis.—The diagnosis of syphilitic encephalopathies is generally difficult on account of the numerous symptomatic forms which may present themselves.

The succession and modality of the symptoms are here circumstances which put us, at the very least, upon the trace of the specific cause. Intense cephalalgia, persistent and obstinate, with nocturnal paroxysms, giddiness, and vertigo, yielding rapidly to the use of mercury or iodide of potassium, is a symptom of great diagnostic importance. Insomnia, whether connected with this symptom or not, is a symptom not less important or less frequent.*

The other symptoms have nothing special, if we except the sometimes transient character of the paralysis. Syphilitic hemiplegia has not, in fact, either the sudden onset or the stability of hemiplegia symptomatic of cerebral hæmorrhage, or of softening succeeding the obliteration of an artery.

Epileptiform attacks without aura, clonic or tonic convulsions without absolute loss of consciousness, preceded or followed by more or less violent cephalalgia, also constitute symptomatic forms worthy of being taken into consideration.

But it is of importance not to stop at the examination of a single system; every organ should be investigated carefully, and thus, with the aid of the commemorative symptoms, and taking into account the concomitant cutaneous, osseous, or visceral affections, and the cachectic condition which is rarely wanting under such circumstances, the physician will generally succeed in recognising, with the seat and extent of the lesion, the source from which it springs. It is thus that a certain malformation of the liver coinciding with slight albuminuria may, in a given case, possess a great diagnostic value.

* Consult, on this symptom, Fracastor; *loc. cit.* Sigmund, in *Archiv. de méd.*, 1857, t. ii. p. 225; Reynaud, in *Ann. des malad. de la peau et de la syphilis*, t. ii. p. 312.

In cases in which the totality of phenomena forms one of the symptomatic groups known under the name of epilepsy, general paralysis, paralytic dementia, &c., the age of the patients and the circumstance that the derangements characteristic of the group in question do not date further back than the appearance of the syphilis, will be valuable indications. These indications most frequently suffice for the diagnosis of syphilitic epilepsy. As regards general paralysis and dementia, the headache or insomnia which precede or accompany them, a peculiar mode of evolution, a jerking gait, in short, a peculiar character, are so many circumstances which dispose us to attribute to them a syphilitic origin and to distinguish them from analogous affections produced by drinking spirits. In alcoholism, in fact, the patient is troubled with dreams, illusions, and even hallucinations; the power of sensation is always affected and the headache usually wanting. The same is the case with the paralytic symptoms produced by lead, which have, moreover, for their most special seat the extensor muscles of the extremities.

The diffused and acute lesions of the brain, such as meningitis and encephalitis, differ too much from the syphilitic affections of that organ for it to be necessary to discuss their distinguishing signs. I ought to mention, however, that in a patient under the care of Professor Grisolle, who succumbed to a cerebral affection which might be regarded as syphilitic, the symptoms had been little different from those of meningo-encephalitis; but that was a rather exceptional case.

Lodged in the brain or situated on the surface of the meninges, tubercular, cancerous, and fibrous tumours give rise to derangements which it is not always easy to separate from those which belong to syphilitic tumours; but by taking into account the age of the patients, their morbid antecedents, and the evolution of the disease, we shall most frequently succeed in suspecting, if not in distinctly diagnosing the nature of each of these changes. Thus, tubercles belong almost exclusively to early age; cancer, on the contrary, is met with at a more advanced age. These changes are accompanied by a special cachexia, distinct from syphilitic cachexia. Fibrous tumours, which are often independent of any diathetic condition, are remarkable for the slowness of their development and by a course progressively increasing, contrarily to syphilitic neoplasms, which most frequently become arrested at a given moment in their evolution.

There is no other affection except pachymeningitis, with or without hæmorrhage, susceptible of being mistaken for a syphilitic affection of the brain or meninges and requiring, to be distinguished therefrom, the consideration of the various circumstances mentioned above.

Prognosis.—When localised in the encephalon, syphilis is to be regarded as a serious disease, not only on account of the importance of the functions involved, but also on account of the frequency of relapses. We often see, in fact, an amelioration or even a rapid recovery followed by fresh symptoms more intense than the first and more difficult to combat (Obs. XLV.).

Statistics furnished by Dr. Gjør show that, out of thirty patients, five were cured, twelve improved, six did not experience any change, and seven died.* In 147 cases collected by Lagneau, junior,† a more or less favourable termination is met with eighty-three times, a fatal one fifty-seven times, that is to say, in about two-fifths of the cases. In seven cases, death was the result of an intercurrent disease.

An examination of the cases, in accordance with the physiological data, shows that the most serious lesions are those which affect the parts most essential to life. Lesions of the bones or meninges, those which occupy only the periphery and convexity of the encephalon, are much less serious than those which reach the more deep-seated parts and the base of the skull.

As regards the symptoms, it may be said that cephalalgia and insomnia are unimportant. Vertigo and convulsive attacks do not always enable us to predicate with certainty the issue of the disease; but they are, in general, less to be feared than the paralytic symptoms and the derangements of the intellectual faculties (idiocy, stupidity, torpor, somnolency), which, of all the syphilitic disorders of the encephalon, are certainly the most serious. These symptoms are, however, the more serious in proportion as they are of longer standing, because there is then reason to fear that to the lesion itself may be added a more or less considerable destruction of the surrounding nerve elements. However the case may be, the syphilitic manifestations of the encephalon are less formidable, even in the absence

* Gjør, *Norsk Magazin*, t. xi. p. 794. *Schmidt's Jahrb.*, t. ci. p. 794 (*Arch. de médecine*, May, 1859, p. 615).

† *Traité des maladies syphilit. du système nerveux*, p. 164, 1860.

of any specific treatment, than any of the affections resulting from a different cause; and it is especially when they are recognised and treated sufficiently early that these manifestations are least serious.

§ 3. *Syphilitic affections of the spinal cord.—Syphilitic myelopathies.*

ANATOMICAL STUDY.

The syphilitic lesions of the spinal cord do not differ from the encephalic lesions except by their seat and less frequency; like the latter, they occupy, sometimes the coverings and more particularly the spinal dura mater, sometimes the nerve substance.

A more or less considerable thickening of the meninges, with frequent adhesions to the surrounding parts, and gummy tumours situated upon the internal or external surface of those membranes, such are the changes in the coverings of the spinal cord. Several cases of visceral syphilis make mention of one or other of these conditions. Dr. Voillemier, surgeon to the Hospital St. Louis, formerly showed us a sketch illustrating the presence of these deposits upon the internal surface of the dura mater of the cord. An analogous example is met with in Zambaco's work.* The circumference of the spinal marrow in the lower half of the dorsal and whole extent of the lumbar region was the seat of a gelatinous effusion of a gummy consistence.

The anatomical derangements occasioned by syphilis in the substance of the spinal cord itself present themselves under one of two forms, the diffused or the circumscribed. In the former variety, the spinal cord is indurated or softened, the ependyma is thickened, and new elements of conjunctive tissue, with or without amyloid corpuscles, develop themselves amongst the nerve elements, which may be consecutively injured or destroyed. It is, consequently, a true sclerosis, the existence of which is proved by the following case which we owe to the kindness of our learned teacher, Dr. Potain.

About the month of February last, there came into the Hôtel-Dieu a woman five months gone in pregnancy, who complained of gastralgia and violent pains in the head, and who had all the symptoms of extreme chloro-anæmia. As the cephalalgia continued to be

* *Des affections nerveuses syphilitiques.* Paris, 1862, p. 251.

felt, especially at night, Dr. Potain suspected, in spite of the denials of the patient, the existence of a syphilitic affection. In fact, he found enlarged and not painful cervical glands, groups of enlarged inguinal glands, and several mucous papules at the verge of the anus. Mild mercurial treatment (proto-iodide of mercury) was commenced and the pains in the head diminished. A month after her admission into the hospital, the patient was safely delivered of twins, before the full time, which lived three days, and in which no sign of syphilis or other morbid symptom was observed during life. In one of them there was extreme debility.

The post-mortem examination showed in both foetuses the special change in the liver described by Gubler, but in a small part only of its extent, the size almost of a large pea, in one at the lower border, in the other upon the anterior border and on the upper surface, near the falciform ligament. At these points was seen a semi-transparent, yellowish colouration, somewhat opaline, hardness, and absence of vascularity, all the characters, in a word, of the change described as syphilitic. There was nothing remarkable in the other thoracic or abdominal viscera.

The brains did not appear changed, and presented the soft consistence usual at that age.

The spinal cord of one of the foetuses appeared also to be in the normal state. The microscope showed in it well-marked nerve tubes.

The spinal cord of the other foetus, on the contrary, was, in its whole length, diminished in size, hard, without any trace of division between the substances, and completely resembling a fibrous tendon except in colour, which was a reddish grey. Under the microscope, Dr. Potain could not discover either nerve cells or any distinct nerve tubes. The whole cord appeared to be formed of condensed laminated tissue, turgid and mixed with an abundant granular substance. The examination of the two cords was made simultaneously, and the considerable difference in structure which existed between them could not be called in question. As regards the spinal meninges, no change appeared to have taken place in them.

A case observed by ourselves is not, in an anatomical point of view, devoid of analogy with the preceding case. It was the question of a man 57 years of age, who sank under the effects of paraplegia, and who presented, together with myocarditis and deep cicatrices on the surface of the liver, softening with sanguineous exudation about

the middle portion of the spinal cord in the cervical region. The primary change consisted in a hypergenesis of the conjunctive tissue with fatty degeneration of the capillaries; but the syphilitic nature of this lesion must remain doubtful, as it is not to be assumed solely on account of the coexistence of cicatrices in the liver. From what we know of the syphilitic manifestations in the viscera, there is every reason to believe that there existed a modification of the same kind in the cases related of syphilitic paraplegia without appreciable lesion: this appears the more probable as no microscopical examination was made.*

The gummy tumour constitutes the characteristic lesion of the circumscribed form. Three cases with which I am acquainted point out the existence of this lesion. A case furnished by MacDowel shows integrity of the meninges and a slight softening of the dorsal portion of the spinal cord, in the midst of which existed a tumour of a yellowish colour, the size of a large pea, of very firm consistence; this tumour projected, especially on the right; it was perfectly round, and smooth and polished on its surface, even when looked at with a glass. The nerve tissue around it was much softened, greatly injected, and spotted with yellow. There was no trace of tubercles in the lungs. The liver was cirrhotic, the spleen enlarged and softened; the kidneys were healthy. A case which forms part of Wagner's Report (*Archiv der Heilkunde*, 1863) mentions the existence of a tumour of the size and shape of a small nut, of a bluish-white colour, and yellowish at the centre, which occupied the centre of the left half of the medulla oblongata. Another tumour, the size of a nut and of lardaceous appearance when cut into, was situated in the left hemisphere of the cerebellum. The liver was everywhere adherent to the neighbouring organs; but, like the author himself and Dr. Jaccoud,† one cannot help having some doubt as to the syphilitic origin of this latter change.

In a paraplegic woman, who died at the age of 53, and who stated that she had contracted syphilis from her husband, Wilks found in the lumbar portion of the spinal marrow of the right side, a hard deposit of the size of a nut and three-quarters of an inch in length,

* See Gjør, *Norsk Magazin* (xi. and xix., 1857). Ricord, *Clinique iconographique de l'Hôpital des vénériens*. Zambaco, *Des affections nerveuses syphilitiques*. Paris, 1862.

† *La paralégie et l'ataxie des mouvements*. Paris, 1864.

surrounded by the posterior roots of the nerves, to which it adhered closely. On section, this mass appeared to be composed of an opaque, yellow, amorphous substance, entirely similar to the substance which formed the nodules found in the lungs and liver. On the surface of this latter organ existed the remains of a cicatrix.*

To these lesions of medullary syphilis might we not add certain cases of grey or amyloid degeneration which, in a symptomatic point of view, find their expression in ataxy of the movements of the lower extremities? Without giving a positive opinion on this point, we cannot refrain from pointing out that ataxy is frequently met with in individuals who have had syphilitic affections, and under such circumstances, it is allowable to suppose that the syphilitic diathesis may have an influence upon the amyloid degeneration of the spinal cord analogous to that which it exerts upon the waxy degeneration of the liver and some other organs.

With the preceding lesions, effects of the localisation of the syphilitic process upon one of the points of the spinal cord or its coverings, we must connect secondary changes resulting from a primary modification of the vertebral column. These changes, which differ little from those which would be occasioned by a foreign body compressing the medullary centre, are evidently subordinate to the anatomical derangement of the osseous system and to the amount of compression resulting from it. They consist in phlegmasiæ with more or less softening and destruction of the nerve elements.

As regards the vertebral lesions, they show themselves in the form of exostosis, caries, or necrosis. In a soldier whose case was published by Minich, of Padua, there was on the level of the second dorsal vertebra a painful projection which there was good reason to regard as a syphilitic exostosis when iodide of potassium was observed to effect the cure of a concomitant paraplegia. An analogous case has been observed by Piorry, and Dupuytren, Montfalcon, and Leprestre, of Caen, have reported cases of syphilitic caries of the vertebræ.†

* See Hutchinson and Jackson, *Med. Times and Gaz.*, 1861, t. ii. p. 85.

† See Léon Gros and Lancereaux, *Des affections nerv. syphilit.*, 1861, Obs. CCXXXV., CCXL., CCXLI., CCXLII., CCXLIII. Compare: Allain, *Compression de la moelle épinière par une ou plusieurs exostoses syphilitiques*, dans *Moniteur des hôp.*, 1858. Passavant, *Syphilitische Lähmungen* (Virchow's Archiv, xxv. 1862).

SYMPTOMATIC STUDY.

The symptoms which correspond to the syphilitic lesions of the spinal cord necessarily present differences, according to the seat of the anatomical localisation at such or such a point of the coverings or of the cord itself. To attempt to point out all these symptomatic differences, would be to undertake to speak of all the cases known, which is impossible; consequently, we shall confine ourselves to making known the phenomena most generally observed. One of the most important is a localised pain in the back, sometimes intense and more violent during the night, when, without doubt, there is some lesion of the vertebral canal. A patient observed by Ch. Bernard complained of the sensation of a bar or constriction around the loins and belly. Sometimes it is at the terminations of the nerves of the extremities that the pain makes itself felt; this pain, nevertheless, has never either the intensity or the rapidity of well-marked ataxy. The patients complain, moreover, of various sensations of cold and swelling, which are felt more particularly in the extremities.*

Tactile sensibility is sometimes affected; it was greatly weakened in a patient of Houstet's, whose lower extremities were cold and had also lost the power of motion; the same was the case in other patients treated by Sandras, Allain, Lagneau, sen., Pétrequin, &c.

A more common symptom, and one which is rarely wanting, is paraplegia. Most of the authors who have treated of this affection have recognised that it is sometimes connected with syphilis. J. Frank even goes so far as to consider syphilis as being one of its most frequent causes. Since Houstet,† who, in 1733, cured by the aid of mercurial frictions a man suffering from complete paralysis of both legs, retention of urine and stools, and impotency, several observations more or less analogous‡ have been given; but they do not all possess the stamp of absolute certainty in reference to a causal relation to syphilis. However the case may be, and if we confine ourselves to the cases most carefully observed, paraplegia

* See an observation by Vidal de Cassis, *Traité des maladies vénériennes*. Paris, 1855, p. 486; and another of Landry's, quoted by Zambaco, p. 231.

† *Mémoire de l'Académie royale de chirurgie*, t. iv. p. 224. Paris, 1819.

‡ These observations and a bibliographical notice of them will be found in G. Lagneau's work and in our own.

almost always supervenes long after the appearance of the syphilitic diathesis, and has a slow and progressive outbreak rather than a sudden one: characterised by uncertainty and weakness in walking, it presents frequent oscillations, which is the peculiarity of a great number of syphilitic manifestations.

Most commonly limited to the lower extremities, paralysis sometimes invades the arms (obs. Landry), but it is rarely accompanied by contraction or convulsions. A patient of Cirillo's and another of Portal's had, it is true, convulsive movements in the lower extremities; but it was not clearly established that these two patients owed their disease to syphilis. However that may be, these symptoms, when they exist, generally form part of the early or late derangements which reveal the existence of a syphilitic affection of the spinal cord.

Like the encephalopathies, the syphilitic myelopathies have moments of arrest in their course, and when, by means of an appropriate treatment, an amelioration, almost amounting to a cure, has been attained, it is not uncommon to observe a relapse. In this manner, the syphilitic affections of the spinal cord generally have a pretty long duration. Recovery may be incomplete or complete. Some cases establish the possibility of the final cessation of all functional derangements.

Diagnosis.—The affections which simulate the functional derangements connected with the syphilitic lesions of the spinal cord are chronic partial myelitis or medullary sclerosis, and certain changes such as epithelial and fibrous tumours, which, by the compression which they exercise, cause symptoms very analogous to those produced by syphilitic deposits. But, since no sign exists which is peculiar to those manifestations, it follows that the antecedents of the patient and the concomitant affections are almost the only bases for a diagnosis.

The diagnosis of syphilitic myelopathies generally presents great difficulties, and if it happens that these affections sometimes pass unperceived, it is not uncommon, on the other hand, to see attributed to syphilis and treated accordingly, cases of paraplegia which are anything but syphilitic. It is important, then, to be clear on this point, and on that account it must not be forgotten that the tertiary syphilitic lesions of the spinal cord have for their chief characteristics, like the cerebral, hepatic, and pulmonary lesions, to be cir-

cumscribed, to be slow in their evolution, and to be insidious in their onset; and thus it will be understood that these lesions, while they paralyse voluntary motion, generally leave intact, in part at least, the sensibility and, above all, the reflex movements of the extremities. But are we on this account to refrain in all cases from attributing to syphilis a lesion which, having destroyed a certain extent of the spinal cord, shall have abolished motion, sensibility and reflex action? If it be possible to speak in the affirmative on this point as regards the manifestations of the tertiary period, I believe that we should be more reserved with regard to the possible lesions of the spinal cord supervening during the secondary period. I do not hesitate, however, to consider as non-syphilitic the following case, which several physicians have sought to connect with venereal disease:—

A young Mexican, 25 years of age, contracted a chancre in April, 1865. In May, he began to take pills with corrosive sublimate, which he continued to use for two months. Suspended for some time, this treatment was afterwards renewed and continued until December. In January, 1866, he had a slight cutaneous eruption, and periostoses, for which iodide of potassium was ordered, then suspended, and afterwards renewed until April, when it was given up on account of symptoms which it appeared to have occasioned, viz., glossitis, lassitude, cephalalgia and a general feeling of discomfort. The syphilitic eruption had then become effaced. In the beginning of May, this patient, generally addicted to drinking, committed numerous excesses, but especially in respect to women. On the 6th of May, he felt formication and weakness in one of his legs. On the 8th, the same phenomena appeared in the other leg. On the 10th, both these limbs were raised with difficulty. On the 15th, motion was completely lost in the right leg, being partly retained in the left. He had pain in the course of the lumbo-abdominal branches of the nerves, retention of urine and stools, a furred condition of the *primæ viæ*, soft and bleeding gums, a normal condition of liver, cephalalgia, and partial insomnia.

On the 16th, there was complete loss of motion in both the lower extremities, and sensation, which for several days had been obtuse or even extinct at several points of both legs, was almost entirely lost throughout their whole extent. There was pain round the waist, at the base of the thorax, with loss of reflex movements. On that

day, I was requested for the first time to see this patient, for whom I ordered cupping in the back and iodide of potassium. This treatment was continued for a month, without producing the least improvement. The paralysis continued as complete as ever and the patient had bedsores at several points subjected to continuous pressure. The urine was thick and there was catarrh of the bladder. These disorders were accompanied by fever and for a short time threatened the life of the patient. He conquered them, however, thanks to the constant attention of those about him and began to improve, moreover, from the moment at which he was put upon a water-bed. The bedsores became cicatrised by degrees, and frequent injections into the bladder ended by improving the condition of the mucous membrane. In August, his general health was good, but paralysis of motion and sensation continued in the lower half of the trunk and lower extremities, with complete absence of reflex action, and retention of urine and stools. From that moment, all active treatment was given up, and the paralysed muscles, which had long lost their electrical excitability, became more atrophied every day. In October, 1867, there was considerable atrophy of all these muscles. The patient's general health was good, and he left Paris for Mexico.

The complete destruction of the whole of the lower half of the spinal cord in this case is a point which cannot be doubted; what may have been the lesion productive of this destruction, is a question more difficult to answer, but, as it cannot be assumed that a hæmorrhage could occupy the whole of the lower half of the spinal cord and take eight days for its completion, it must be admitted that this destruction was the effect of a myelitis extending rapidly to the entire lower segment. But a delicate point remains to be discussed: How was this myelitis produced? Was it produced by the syphilitic infection, or by the excesses? These are the only two causes which it is possible to invoke. Had it supervened in the course of tertiary manifestations, this lesion of the spinal cord would have appeared to me certainly attributable to the venereal excesses, but at the period in which it was produced, that is to say during the secondary period, it does not appear to me that the syphilitic influence should be rejected too readily. However, since secondary localisations of syphilis are rare, if they exist at all, it is reasonable, in a case in which specific treatment did not produce any result, to abandon the hypothesis of a syphilitic origin.

If complete paraplegia, accompanied by painful sensations in the course of the nerves and by contraction, indicates more particularly a lesion of the coverings; on the other hand, complete paraplegia with reflex movements is rather the sign of a primary lesion of the spinal cord.

Prognosis.—If we confine ourselves to the facts known, it is difficult to point out with precision the degree of danger of syphilitic myelopathies. Their prognosis necessarily varies, as is easy to understand, with the seat and extent of the change. Recovery may occur in certain cases, when treatment has been adopted before the nerve elements were destroyed, and thus the syphilitic lesions of the spinal cord are comparatively less serious than those of most of the affections of that organ.

• § 4. *Syphilitic affections of the nerves.*

Like the encephalon and the spinal cord, the nerve trunks may undergo directly or indirectly the influence of syphilis; in other words, they may be affected primarily by a lesion involving a greater or less part of their extent, or secondarily in consequence of the compression produced by changes in the organs in their vicinity, and more especially in the bones.

Exostoses, hyperostoses, lesions of the fibrous tissues, &c., are so many causes capable of modifying the integrity of the nerve trunks, and of deranging their functions. We have already, as is known, referred to changes of this nature the facial hemiplegias which supervene at the commencement of the secondary period. Here we shall give little attention to these secondary lesions; we shall devote ourselves rather to the consideration of the tertiary lesions, those especially which directly affect the substance of the nerve trunks itself.

ANATOMICAL STUDY.

Regarded from the point of view at which we are placed, the anatomical modifications presented by the nerve trunks are of two kinds, and reveal themselves either by a thickening of the web of conjunctive tissue (interstitial neuritis, diffused hyperplasia), or by the presence of nodules comparable to neuromas, but which, in reality, are nothing else than gummy tumours.

In a woman affected with constitutional syphilis, and complete

paralysis of the fifth pair, and who was subject to attacks of epilepsy, Todd,* found the Gasserian ganglion and the nerves which emanate from it atrophied in consequence of the compression produced by false membranes (*in consequence of pressure from adherent membranes*). A case already pointed out by Bayle and Kergaradec mentions the destruction of the olfactory nerves, and softening and diminution in size of the optic nerves. These same nerves, on the left side especially, were atrophied in a case related by Meyer (Obs. VIII.). In a case of Esmarck and Jessen's,† the oculo-motor nerves, knotty at their point of exit from the cranium, presented three times their normal thickness, and were transformed, together with the neurilemma, into a homogeneous, lardaceous mass, consisting of a finely granular substance. The left trigeminus was hypertrophied and the auditory nerves of the same side were of a pale yellow colour. In a case of syphilitic amaurosis, Dittrich ‡ mentions the transformation of the optic nerve into a dirty grey, flaccid, villous and fibrous mass. Virchow saw in the place of the right oculo-motor nerve a thick, reddish, and callous mass; the left oculo-motor nerve was swelled and infiltrated with a reddish tissue, and the olfactory nerves were lost in a pathological tissue of new formation. It would be difficult not to see in all these facts, despite the paucity of the anatomical details, a primary change in the nerve, the starting-point of which is the conjunctive tissue. From the moment that no mention is made of any other change in the vicinity, the true lesion, in all these cases, is evidently an interstitial neuritis. Let us now examine the cases in which lesions analogous to gummy tumours were observed.

Dixon § observed in two cases of tertiary syphilis, partly in the coverings, partly in the substance itself of the optic, oculo-motor, rectus externus and trigeminus nerves, small, very firm reddish or yellowish masses. Analogous deposits occupied at the same time the membranes of the brain and were spread around the internal carotid and basilar arteries. Rayney examined one of these tumours, which was of a pale yellow colour, hard and almost cartilaginous, and found it to be formed of a fibrous tissue mixed with granular

* See Hutchinson and Jackson (*loc. cit.* p. 133).

† Esmarck and Jessen, in *Allgem. Zeitschr. für Psychiatrie*, 1857, p. 20 et seq. L. Gros and Lancereaux, *loc. cit.* p. 288.

‡ *Prager Vierteljahrschrift*, 1849, t. i. p. 23.

§ *Med. Times and Gaz.*, October 23rd, 1858.

matter. Portal * relates that a woman long affected with syphilis (exostosis) presented at the back of the orbit a fungous tumour of the size of a strawberry, adherent to the bulb of the optic nerve. The sphenoid was carious in the vicinity of the optic foramen and the dura mater adhered to the bones. The cerebral substance was softened about the mammillary projections; there was effusion of a reddish fluid into the ventricles.

The cerebral nerves are the most usual seat of syphilitic localisations, which show themselves more especially at their point of emergence. Lesions of the spinal nerves are less common. The sciatic, on account doubtless of its size and vascularity, and the trunks of the brachial plexus: such are, in the order of frequency, those amongst these organs the disorders of which it has been possible to connect with syphilis; but the changes of which they may be the seat have not yet been, so far as I know, verified by post-mortem examination. However, to judge from the muscular atrophy which sometimes accompanies them, these changes do not differ from those of which we have just been speaking, so that the anatomical description which has gone before may be applied to all the nerves in general.

SYMPTOMATIC STUDY.

A collective study of the symptoms which correspond to the syphilitic lesions of the nerve trunks is difficult by reason of the difference of physiological function proper to each of those organs. In fact, to take only the cerebral nerves most frequently affected, we see that there are some, such as the common motor oculi, the external motor oculi, or the obliquus major, a change in which invariably causes, so to speak, paralysis of the motor muscles of the eye; others, on the contrary, such as the trigeminus, in which the change reveals itself by preference in the form of pain; others, lastly, such as the optic nerves, which produce derangements of vision. This circumstance induces us to study separately the functional derangements proper to each pair of nerves.

Nerves of the third pair or common motores oculi.

The syphilitic affections of the nerves usually show themselves in the form of paralysis.

* *De la nature et du traitement de l'épilepsie.* Paris, 1827, p. 48.

Paralysis of the common *motores oculi* nerves or of the third pair is so frequent in the course of syphilis, that its existence alone should always suggest the idea of that disease. The facts hitherto observed have presented themselves sometimes in the course of the secondary period, as happens in certain cases of facial hemiplegia; sometimes, and most frequently, in the tertiary period. The paralysis rarely occupied both sides, sometimes it was even limited to a single branch or to a single ramification of the nerve. One of the first phenomena of this paralysis is the falling or prolapsus of the upper eyelid, without epiphora, which depends upon the persistence of action of the orbicularis muscle. In certain cases, the branch of the levator palpebræ being alone affected, this phenomenon is unique. But, most frequently, the other branches participate in the change, and then external strabismus exists, and the eye undergoes a movement of rotation from below upwards and from without inwards, around its axis. At the same time the pupil is dilated and the iris has lost its mobility. Some patients complain, moreover, of diplopia, and of a certain amount of weakness of sight, for want of adjustment in the eye.*

Such is, in its uncomplicated form, syphilitic paralysis of the third pair; but frequently this paralysis is not isolated; it exists with encephalic derangements,† which, moreover, are very useful in a diagnostic point of view, as it most commonly does not present any special character, and its origin is revealed only by the manifestations which accompany it.

Pathetic nerves or fourth pair.

Paralysis of these nerves, according to the cases published, rarely acknowledges a syphilitic origin, having been observed only twice in all: once by Mackensie‡ and once by Graefe.§ To the diplopia,

* See Ebrard, *Gaz. méd.* Paris, February 25th, 1843, p. 221. Rayer and Badin d'Hurtebise. Thèse de Paris, 1849, pp. 17-22. G. Lagneau, *loc. cit.* p. 242.

† See observations by Ebrard, Schutzenberger, Sandras, Ricord, Yvaren, Deval Dupré, Hérard, &c., in Léon Gros and Lancereaux, *loc. cit.*

‡ *Traité des maladies de l'œil*, trad. franç. par Warlomont et Testelin. Paris, 1856, p. 519.

§ *Archiv für Ophthalmologie*, t. i. part ii. pp. 313, 318.

which is the chief symptom of it, is generally added a slight falling in of the cornea on the paralysed side.

A characteristic of this diplopia is, that the two images are placed one above the other and that they persist, whatever may be the point towards which the eyes converge. According to Follin, to cause the second image to disappear, it would suffice to turn the head towards the left if the right obliquus major were paralysed, and towards the right if it were the same muscle of the left side.

External motores oculi or sixth pair.

Observed by Rayer, Badin d'Hurtebise, Sandras,* Mackensie, Knorre,† Foville, Moissenet, Landry, Behran,‡ Luton,§ A. Maunier,|| the syphilitic affections of the external oculo-motor nerves manifest themselves in the form of paralysis. Like most of the syphilitic paralyses of the cranial nerves, they are sometimes preceded by pains which usually have their seat in the temporal, supra-orbital, and frontal regions of the same side, and which, in one case, were felt in the temporal region of the opposite side. Internal or convergent strabismus, diplopia, and a certain degree of weakness of sight : such are the chief symptoms of syphilitic paralysis of these nerves. Beyran observed, moreover, contraction of the pupil with persistence of its contractility, which Luton has sought to explain by an anomaly in virtue of which the motor root of the ophthalmic ganglion was furnished by the external oculo-motor nerve. The eye is adducted. If the paralysis be incomplete, the efforts of the patient show themselves in slight jerks, which throw the globe outwards, without being able to keep it there ; but if the paralysis be complete, the eye, being retained inwards, shows only part of the cornea, the other part being concealed in the angle of the eye. Diplopia exists only when the patient fixes both eyes upon an object ; with a single eye the sight is always distinct. The two

* *Journ. de méd. et de chirurg. prat.* Paris, 1851, p. 338, et *Gaz. des hôpitaux*, October 30th, 1854.

† *Deutsche Klinik*, 1849, p. 60.

‡ *Union Méd.*, July, 1860, Syphilitic paralysis of external motor oculi nerve.

§ *Union Méd.*, September 20th, 1860.

|| *Paralysie syphil. de la sixième paire* (*Union Méd.*, 1861, t. ii. p. 394.

images are parallel or superposed, according to the disposition of the object. Recovery, which is the usual termination of this paralysis, is not retarded, in general, more than from fifteen to thirty days, under the influence of an anti-syphilitic treatment. It is to be remarked that all other remedies are inefficacious. The prognosis is favourable.

Facial nerves or seventh pair.

It is also in the form of paralytic derangements that syphilitic affections of the seventh pair reveal themselves.

Facial hemiplegia of syphilitic origin is not very rare, as Ladreit de la Charrière mentions thirteen cases supervening, with some exceptions, in the tertiary period, and not, as we have seen above, at the commencement of the secondary period. The lesion which produces it is as yet very little known, on account of the small number of post-mortem examinations. Some authors have admitted in such cases, without any direct proof, a lesion of the fibrous tissue (inflammation of the neurilemma) or of the bones (exostosis or periostosis). Ménière, by Bedel's account, saw in syphilitic subjects whose temporal bone appeared hypertrophied, swelling of the petrous portion and a change in the nerve of the seventh pair; it might also well happen, as it appears to me, that this paralysis should depend upon the presence of syphilitic deposits at the origin of the nerves. Usually preceded by acute pain, facial paralysis sometimes comes on suddenly, sometimes slowly and to a certain extent progressively, which appears already to show that various lesions may produce it. Its characters are well known: all the muscles of one side of the face are generally paralysed, whence the deviation of the labial commissure, the difficulty of whistling, mastication, &c., as well as the impossibility of closing the eye. The orbicularis palpebrarum is most generally affected in this form of paralysis which usually results from a change in the nerve itself. The electrical excitability of the muscles is usually diminished or entirely lost. The persistence or the absence of this phenomenon shows whether the change is situated in the nerve centre or in the nerve itself. Deviation of the velum palati is the sign of a lesion in the vicinity of the origin of the nerve.

In certain cases, concomitant derangements of sensation give reason to believe that the fifth pair is affected simultaneously.

syphilitic facial paralysis generally occupies one side only of the face. Davaine* gives, according to Ch. Bell, one case of double facial paralysis of syphilitic origin. Usually more obstinate than paralysis of the motor nerves, this affection nevertheless frequently ends by yielding to an appropriate treatment: in other words, its prognosis is favourable. The nerve may, however, become atrophied and undergo a destruction more or less complete; paralysis then continues indefinitely.

Pneumogastric and spinal nerves or tenth and eleventh pairs.

There is not as yet, so far as we know at least, any positive case which proves that the pneumogastric nerves have ever been the real seat of a syphilitic localisation. This hiatus may result from the imperfect knowledge which we possess of the functions of the pneumogastric nerves, from the facility of confounding the derangements which are produced by changes in these nerves, and from the little care which is taken in looking for the lesions with which they may be affected. However the case may be, there is reason for asking whether it is not to changes in the pneumogastric or spinal nerves that are to be attributed certain cases of paralysis of the pharynx, certain asthmatic affections,† certain gastralgic affections,‡ which have appeared to yield very rapidly to specific treatment?

Hypoglossal and glosso-pharyngeal nerves.

The existence of a syphilitic lesion of the hypoglossal nerves has not yet been proved, and if, in certain cases of syphilis, mention is made of difficulty or impossibility of articulating sounds, this derangement is connected with a change entirely independent of those nerves.§

* *Mémoires de la Société de biologie*, t. iv., 1852. Consult: O'Connor, *Paralysie double de la face*, in *Union Méd.*, 1861, t. ii. p. 160; and *Dublin Quarterly Journal*, February, 1861. Maunier, *Hémiplégie faciale*, in *Gaz. des hôpitaux*, 1862, p. 27.

† See B. Bell, *Traité de la gonorrhée virulente et de la maladie vénér.* Paris, 1802, p. 638. L. Gros and Lancereaux, *loc. cit.*

‡ Trousseau and Andral, quoted by Gros and Lancereaux, *loc. cit.* p. 67.

§ See Lagneau, *Affect. nerv. syph.* Paris, 1860, p. 322.

No case, so far as I am aware, shows any syphilitic lesion of the glosso-pharyngeal nerves.

Trigemini nerves.

The symptoms connected with lesions of the trifacial nerve vary not only with the degree of compression or change in that nerve, but also with the branch affected, for we know that these various circumstances are capable of presenting themselves. Various sensations, pains more or less violent, and sometimes anæsthesia: such are, together with the muscular derangements on the part of the jaws, the symptoms observed in these cases. A female patient of Lallemand's* continued, after transient syphilitic hemiplegia, to have formication and numbness in the whole of the right side of the face, as if a cobweb had been applied to the skin. A similar sensation existed in the right half of the tongue and in the right thumb. A case related by Hérard and Baudot† makes mention of a numbness of the right ala of the nose and of the neighbouring parts of the cheek and upper lip.

The pain, which is perhaps the most constant phenomenon, generally occupies one of the lateral halves of the head (Waton, Guérard, Rayer, Badin d'Hurtebise, and Yvaren). It sometimes changes to the other side, as in the case of a patient of Guérard's, in whom it passed from left to right; or it shows itself on both sides at the same time (Benj. Bell, Graffenauer, Cruveilhier, and Yvaren). At other times, it remains limited to one of the branches of the trigeminus, or even to one of the ramifications of those branches, the frontal ramification of the ophthalmic. Some authors, as Plenck, Meckel, J. Frank, &c., have admitted syphilitic odontalgia, but without bringing any fact in support of their view. Merely as a syphilitic affection, trifacial neuralgia has no distinctive characters. More violent in the vicinity of certain points, it radiates in various directions; in a patient of Rayer's, it had at first its maximum of intensity in the left temple, afterwards in the forehead, then in the left side of the nose, in the course of the external branch of the nasal nerve, which springs from the ophthalmic of Willis.

* *Recherches anat. path. sur l'encéphale*, t. iii. p. 101.

† *Union médicale*, Jan. 2nd, 1859.

without wishing to lay more stress upon the seat of these pains, let us mention that they sometimes present nocturnal paroxysms (ank), and that they are, in certain cases, accompanied by derangements which show that the lesser or motor root of the same nerve participates in the change. In reference to a female patient cured by Ozia-Aimar, and who recovered by the aid of a specific treatment, it is stated: "Mandibulas frequenter agitabat (morbus), et lintea continuo intra dentes habere cogeretur, quæ identidem lebat ac dentibus conterebat."

In two cases observed, the one by Waton,* the other by Schutzenberger,† mention is also made of a trembling of the lower jaw. Anæsthesia and analgesia have been seen to follow these derangements; this was doubtless the indication of destruction of the nerve.

The diagnosis of the syphilitic lesions of the trigeminus rests not entirely upon the commemoratives and antecedents of the patients. It is also important to take into account the concomitant manifestations. The prognosis is not unfavourable, provided that treatment be not commenced too late.

Spinal nerves.

Less exposed to the influence of syphilis than the cranial nerves, spinal nerve trunks sometimes manifest, however, disorders of motility and sensation which it is impossible not to attribute to that cause. These disorders show themselves in the form of contraction, paralysis, and simulate neuralgia, analgesia, or anæsthesia.

Schutzenberger points out in the patient who forms the subject of some of his observations a pain in the right arm and shoulder which increased without any known cause; this pain was sometimes accompanied by cramps which drew the head towards the right shoulder, and by a contraction of the flexors of the fingers.

When the intercostal nerves are affected, the pains occupy the sides of the chest, as was observed in a patient of Ebrard's who could not sleep on account of a feeling of constriction and weight in the thoracic parietes. Piorry cured by a specific treatment an in-

10 cases of venereal tic douloureux, *Rec. pér. de la Soc. de méd.* Paris, t. iv. p. 178.

12. *méd. de Strasbourg*, March 20th, 1850. Lagneau, *loc. cit.* p. 258.

dividual who was suffering from pains in the lumbar and sciatic plexuses.

There are to be found in our treatise on the syphilitic affections of the nerves,* three cases of sciatic neuralgia which had long resisted all treatment and which yielded as if by enchantment, when, the existence of syphilis being suspected, mercury and preparations of iodine were prescribed. Vandekeere † has contributed a case of ilio-scrotal neuralgia which was combated successfully by Van Swieten's drops.

Side by side with the neuralgic pains connected with syphilis ‡ are to be placed cases of partial paralysis, to which it is sometimes difficult not to attribute a specific origin. A man 42 years of age, treated for rheumatic pains in the back, neck, and arms, afterwards had atrophy of the upper part of the neck and left arm, with weakness of the muscles of those regions. The waters of Aix in Savoy had removed these pains; the atrophy and weakness resisted even moxas and blisters, when a syphilitic eruption suggested the administration of iodide of potassium, which agent cured all these symptoms.§ A very analogous case is given by Vidal de Cassis.|| We have been able to convince ourselves that a certain number of cases of partial paralysis, with atrophy and loss of electrical excitability of the muscles, the cause of which remained unknown, really resulted from syphilis.

The following case, communicated to us by one of our best friends,¶ comes in support of our observation. A woman 35 years of age, had contracted a chancre, seven years previously (1857); she had since had roseola, and for three months was subjected to a

* *Loc. cit.* p. 63. Compare: Cirillo, *Traité complet sur les malad. vénér.* Paris, 1803. J. J. Plenck, *Doctrina de morb. vener.* Vienna, 1779. Zambaco, *Affect. nerv. syph.*, 1862. E. Bruneau, *Sciatique syph.* (*Gaz. des hôp.*, 1864, p. 118).

† *Mém. sur les formes insolites de la syphilis*, in *Journ. génér. de méd. et de chirurg.* de Sédillot, t. cii. p. 310. Consult: E. Vaulpré, *Quelques faits de névralgie syph.* (*Bulletin de thérapeutique*, Jan. 30th, 1852, and *Ann. des malad. de la peau*, t. iv. p. 137).

‡ Add to the above indications: Franceschi, *Cas de syphilis tertiaire*, in *Il Raccogliatore Medico*, 1848; and *Gaz. méd. de Paris*, 1848, p. 614. Leubuscher, *Deutsche Klinik*, No. 6, 1861.

§ Niepce, *Moniteur des hôpitaux*, 1853, p. 383.

|| *Traité des malad. vénér.*, p. 441, 1855.

¶ Dr. Paul Rousseaux, now a distinguished physician at Vouziers.

treatment with pills. The first symptoms completely disappeared. A year afterwards, she had pain and swelling in the right knee ; for a whole year, she had nocturnal exacerbations. Frictions were without effect. She was then treated for tertiary disease : forty-five grains of iodide of potassium daily. A cure took place in three months. The treatment was not continued. The pains returning two or three years later, she again took iodide of potassium. In November, 1864, she had fresh pains in the left shoulder ; the humerus was enlarged and deformed by the presence of exostoses. The muscles of the supra and infra-spinal regions were atrophied, the deltoid and pectoralis major had undergone the same change and scarcely responded to electric excitation. The patient had great difficulty in moving the jaws ; the right eye, protruded from the orbit, appeared firmer than usual ; the tissues pitted under the finger, which left a depression as in œdema durum.

Iodide of potassium was again administered. This treatment was continued until January 26th, 1865 ; she had, moreover, œdema of the lower extremities and albumen in the urine, but her condition afterwards became improved.

In referring to the cases of partial paralysis given by Duchenne (of Boulogne), in his treatise upon local electrification, I asked myself whether syphilis did not sometimes exist in them, and was led to believe that such was the case in some instances.

To sum up, most of the nerve trunks may undergo the influence of the syphilitic diathesis ; but, in spite of a change almost identical, each nerve reveals its diseased condition by peculiar symptoms in relation with the functions it has to perform.

The cerebral nerves are those most frequently affected, then the sciatic, and lastly the other nerve trunks.

The corresponding derangements not having any distinctive character, it is important for diagnosis to rely upon the commemoratives of the patients and to take into account the nocturnal exacerbation of the pains. So long as there is no destruction of the nerve elements, these affections may become cured. Later on, a cure must be regarded as difficult ; it is not perhaps impossible, as the nerve tubes are capable of reproduction, as has been proved by the valuable researches of Vulpian and Philippeaux.*

* *Recherches expérimentales sur la régénération des nerfs séparés des centres nerveux*, in *Mém. de la Société de Biologie*, année, 1859.

Splanchnic Nerves.

The history of the painful affections of the viscera generally being as yet very incomplete, it is not surprising that those of them which acknowledge a syphilitic origin should be little known.

We were, however, formerly able to collect six cases in which the existence of a syphilitic change in the splanchnic nerves may, at the very least, be suspected (gastralgia, enteralgia, hepatalgia). The cases are borrowed from reliable authors (Trousseau and Pidoux, Andral, Portal, and Baumès), and in spite of the absence of anatomical demonstration, there is reason to believe that the derangement of which they make mention depended rather upon a modification of the nerve than upon a material lesion of the organ affected. In any case, it must be admitted that painful syphilitic affections of the viscera are not serious, since they are, for the most part, cured with rapidity.*

ARTICLE IX.—APPARATUSES OF THE SPECIAL SENSES.

There was question above of the affections of the organs of the senses connected with the secondary period ; it remains for us to study here the tertiary lesions which affect the parts which form the apparatuses of the senses. Three only of these apparatuses will demand our attention ; more complicated than the two others, they each consist of a bony cavity in which is contained the organ to which the nerve of special sensation is distributed.

§ 1. Olfactory apparatus.

The mucous membrane, the bones, the cartilages, the olfactory nerves, all the tissues, in a word, which concur in the formation of this apparatus, may be singly or simultaneously affected. In accordance with our plan, we shall study successively the lesions peculiar to these various parts ; we shall, however, dispense with a formal history of them, these affections having been recognised by most authors.

Ulcerative syphilitic rhinitis, syphilitic ozæna.

One of the worst forms of ulcerative inflammation of the mucous

* See L. Gros and Lancereaux, *Affect. nerv. syph.* Laboulbène, *Des viscéralgies*. Thèse d'aggregation. Paris, 1860.

membranes is syphilitic rhinitis, an affection the more serious as it is often overlooked and its existence not recognised until it has committed irreparable ravages. At first, the patient feels obstruction in one of his nostrils, with pain in a fixed point, he presents the symptoms of a stoppage and of a state of catarrh, and expels from time to time a blackish, porous crust, tinged with blood on the surface; an inodorous, serous fluid, almost colourless, is secreted at the same time as the mucus.

So far the change is superficial. When deeper and more extensive, it occasions the permanent flow of a sero-sanious fluid the more foetid in proportion as the affection reaches more deeply-seated parts. When this change occupies the anterior orifice of the nasal fossæ, there is seen, generally upon the septum or upon the internal surface of the *alæ nasi*, a yellowish crust which covers an ulcer of a rounded form and fungous appearance. If seated higher up, it may sometimes be recognised with the rhinoscope. With the aid of that instrument, Türk was enabled to see upon the posterior surface of the *velum palati* confluent ulcerations covered with pus, and numerous vegetations about the posterior orifice of the nasal fossæ and upper wall of the naso-pharyngeal space.

When the change in the Schneiderian membrane involves the destruction of the bones or of the subjacent cartilage, or when these are affected primarily, we sometimes see considerable portions of the denuded bones or cartilages become detached and expelled. The liquid which then comes away is of a dirty black colour and extremely foetid. Under these circumstances, the sense of smell is weakened or entirely lost, the parts in the vicinity of the ulcers become swelled, red, and painful, the nose is changed in shape, falling in and becoming flattened if the septum be involved. Under other circumstances, the skin which covers the cartilages of the nose first becomes inflamed; it sometimes continues red and sensitive, then small ulcers supervene which, by their junction, sometimes form only a single wound; the cartilages are gradually destroyed, and the nose assumes a somewhat hooked, thin shape, which has obtained for it the name of "sheep's nose." These various changes, which end by the elimination of the bones and cartilages, were already known to Baillou. That author writes, in fact:—"There is a species of anosmia which supervenes in the tertiary period of syphilis, when the interior of the nostrils is eroded and ulcerated."* It is to these

* Baillou, *Paradigma*, No. 47, et Sauvages, trad. franç., t. ii. p. 213.

changes that the term syphilitic necrosis has been applied, and under which they have been described quite recently.*

Side by side with these lesions, let us point out gummy tumours analogous to those observed in the larynx; these tumours, apart from the derangements which they occasion directly, are a cause of secondary changes in the osseous and cartilaginous tissues.†

The modifications which may involve the olfactory nerves usually produce more serious functional derangements; but the opportunity of observing them is rarely met with. Amongst the cases which prove the possible invasion of the olfactory nerves by syphilis, we shall quote an observation by Bayle and Kergaradec,‡ in which there was destruction of those nerves, and another by Virchow in which they were lost, as it were, in a considerable disorganisation of the brain. The work which we ourselves published together with Dr. Gros contains analogous cases, but unfortunately the functional derangements were, for the most part, badly observed. However the case may be, the physiological experiments relative to the olfactory nerve are too explicit for us to refuse to admit that a change in them may be possible without a partial or total anosmia.

The diagnostic signs of the syphilitic affections of the organ of smell vary according as one or other of the lesions pointed out above predominates. It is easy to recognise syphilitic erythema and mucous patches of the nose; but the same does not hold good for the deep ulcerations and the derangements which they occasion, although the diagnosis of them, now facilitated by the employment of the rhinoscope, may be based upon the concomitance of other lesions of the same nature.

The affections resulting from glanders, farcy, and scrofula resemble, in some of their characters, the syphilitic lesions which we are examining. The rhinopathies which accompany glanders are, however, distinguished at their commencement by the presence, upon the mucous membrane in the vicinity of the anterior nasal orifice, of small rounded pustules, surrounded by a pink circle, and afterwards by sanious ulcerations differing from those produced by syphilis. The lesions peculiar to scrofula, slow in their evolution

* G. Lagneau, in *Gaz. hebdom. de médecine et de chirurgie*, p. 441. Paris, 1860.

† St. Arromann, *Thèse de Paris*, 1858, p. 18.

‡ *Nouv. bibliothèque méd.*, February, 1823.

like those of syphilis, are more difficult to distinguish from these latter manifestations. The commemoratives and the fact that scrofulous ulcers of the nasal fossæ most frequently follow the softening of tubercular deposits, are circumstances which will come in aid of the diagnosis. Already, by the pains which it occasions, the headache which usually accompanies it,* and the foetor exhaled by the nasal fossæ, syphilitic necrosis of the nose cannot be confounded with typhous necrosis of that organ, from which it differs, further, by its course and by the nature of the antecedent or concomitant manifestations. These manifestations constitute almost the only datum which can serve for the recognition of syphilitic anosmia resulting from a change in the olfactory nerves.

If the syphilitic affections of the nose are not, in themselves, extremely serious, it should nevertheless be known that, when they are deep-seated and attack the bones, they may be followed by putrid or purulent absorption, or at the very least by deformity of the nose and embarrassment of the function of respiration.

§ 2. Apparatus of vision.

Lesions of the lachrymal ducts.

G. Lagneau, Malad. syphil. des voies lachrymales, *Archives de méd.*, t. i., 1855. Bourgeois, *Presse médicale belge*, 5, 1863, in Schmidt's *Jahrb.*, p. 233, No. 8, Aug., 1864. Zeissl, Ueber syphilitische Erkrankung. d. Thränenwege. Wien. Wochenblatt, xvii. 11, 12, 1861; and Constitutionell. Syphilis. Erlangen, 1864.

Syphilitic lesions of the conglomerate glands are not common; but we have seen above that the submaxillary gland may be affected with syphilis. Dr. Châlons† has given a case of change in the lachrymal gland supervening from the influence of the same cause.

An individual who had contracted a chancre, had successively swelling of the lymphatic glands, iritis, ulcerative coryza, and swelling of both lachrymal glands. This swelling had gradually become so considerable that it formed on the outer side of the globe

* Fred. Hoffmann, t. iii. pp. 442 and 198. B. Bell, t. ii. p. 146. Lagneau, *Gaz. hebdomadaire*, p. 441, 1863.

† Châlons de Luxembourg, *Adenitis lachrymalis syphilitica* (Preuss. Vereinszeitung, No. 42, 1859.

of the eye a surprising and fantastic protuberance, much larger, however, on the right side than on the left. The upper eyelid hung like a bag before the eye and was of a slightly red colour, especially in its outer half. Its upward motion was, however, but little affected. On palpation, the edge of the tumefied lachrymal gland was felt to project the whole length of the lachrymal fossa. The swelling was not painful and did not occasion any other inconvenience than a slight degree of pressure and tension. No derangement of the functions of the lachrymal gland were observed. Frictions with mercurial ointment were ordered. The coryza, angina, and swelling of the lachrymal gland began to abate about the third or fourth day, and the latter even diminished in size so appreciably, that no doubt could be entertained of the specific action exercised by the mercurial ointment. The patient, after using an ounce of mercurial ointment, was completely cured.

The lachrymal ducts and nasal canal in particular are generally the least spared, by reason, no doubt, of their fibro-osseous structure. Boerhaave, Saint-Yves, Astruc, Fabre, Gardanne, Hunter, Plenck, Swediaur, Wentzel, Demours, Boyer, Chelius, Walter, Cloquet, Lagneau, sen., Velpeau, Tavignot, and Yvaren, have pointed out the existence of syphilitic affections of these parts, which all of them attributed to an osseous lesion. B. Bell, Petit-Radel, and Jourdan, speak of lachrymal fistulæ of syphilitic origin. Quite recently, Lagneau, jun., has published on this matter an excellent report,* from which I shall borrow a part of the following details, and, since then, Zeissl and Bourgeois have added some new facts to those already known.

The syphilitic affections of the lachrymal ducts have for their starting-point, either inflammation of the conjunctiva, or a lesion of the bones, and this difference of origin entails a difference in the period of their appearance and in the local means of treatment. Those of them which result from a modification of the mucous membrane of the sac or of the lachrymal ducts generally appear in the exanthematic period of the disease, at the same time as the erythema of the nasal and ocular mucous membranes; but they are also seen to appear later, in the tertiary period. To this period belong the lesions of the bones.

* *Arch. de méd.*, t. i. p. 536, 1857. This report contains ten observations, two of which were made by ourselves.

A turgidity more or less considerable constitutes the chief phenomenon connected with the change in the mucous membrane; later on, this membrane ends by becoming ulcerated, whence bridges and more or less considerable contraction at some point of the lachrymal ducts; often even consequent epiphora. If it has for its seat the nasal canal, this change may be followed by a tumour which may end in a fistula. The osseous lesions (periostosis, exostosis, caries, or necrosis) affect the os unguis, or the ascending apophysis of the superior maxillary bones, sometimes the angular apophysis of the frontal bone, and then, at the internal or inferior portion of the edge of the orbit is found, by the finger or by catheterism of the nasal canal, a hard, resistant enlargement of the bone, which most frequently facilitates the diagnosis.

The possibility of curing by the aid of a specific treatment the syphilitic affections of the lachrymal ducts renders their prognosis less serious than that of the analogous lesions resulting from a different cause. In the cases in which obliteration follows a cicatrix of the mucous membrane, it is evident that local treatment must be combined with the general treatment.

Lesions of the eyelids.

The eyelids are variously affected by syphilis. Cullerier, Mackensie,* and Ricord† have seen chancres of the eyelids produced by the kisses or by the fingers of an infected person; a case of the same kind has been communicated to us by Dr. Alph. Desmarres. Chancre of the eyelids is generally indurated and accompanied, as in the case observed by Ricord, by preauricular and sub-maxillary adenopathies, which constitutes a valuable sign for precise diagnosis. The importance of this diagnosis is great, for it is easy to understand how serious a mistake it would be to remove this chancre under the idea that it was an epithelioma.

In the secondary period, the syphilitic lesions of the conjunctiva consist in small, circumscribed, prominent, non-vascular patches, of which some are of a reddish grey colour, others yellowish or copper-coloured. These patches, as we have already mentioned, do not

* *Traité des maladies de l'œil*, trad. franç. de Warlomont et Testelin, t. i. p. 174. Paris, 1856.

† *Lettres sur la syphilis*, 2^e édit.

differ from eruptive patches upon the skin, with which they may coexist.*

In the tertiary period, the external surface of the eyelids is sometimes the seat of an ulcerative or even serpiginous syphilide which, by the cicatricial contraction which it occasions, is capable of producing ectropion. This symptom may also, of course, follow gummy tumours.

Lawrence mentions having seen, in cases of syphilis, the eyelids tense and painful, covered with greyish round ulcers, the starting-point of which had been a cutaneous tubercle. It is important not to confound these ulcers with cancerous ulcers.

Tertiary lesions most frequently occupy a more or less considerable portion of the thickness of the eyelids and are rarely limited to the conjunctiva. A case of gummy change in the conjunctiva has been given by Professor Magni, of Bologna;† but nevertheless, despite the authority justly acquired by that ophthalmologist, this observation, which we give here, does not appear quite incontestable. The case was that of a young woman of 18, who, after having had gonorrhœa and ulcers, had a cutaneous eruption and iritis. Six months afterwards, she had œdema of the eyelids, watering of the eyes, pains extending to both eyes, continuous, with nocturnal exacerbations; also photophobia, which was not constant but increased in intensity at times. Several tumours of the size of a pin's-head or a lentil, hemispherical in shape, were situated under the conjunctiva and partook of its movements, with the exception of one of them which rested upon the perimeter of the cornea. These small tumours were of a whitish colour at their apices and red at their bases. In the free spaces of the conjunctiva there existed an injection of radiating vessels which formed groups having each for its centre one of these tumours, and the whole closely resembled the exudations observed in scrofulous conjunctivitis. As these tumours increased with great

* Not unfrequently there are observed on the surface of the eyelids one or more ulcers belonging to the secondary period. Consult: Kirschler, *Ueber secundäre syphil. Geschwüre des Augenhedes (blepharitis syphilitica)*. Wien. med. Wochenschrift, xvi. pp. 72-74. Several cases of chancre of the eyelids have been given by ophthalmologists; of these we shall speak further on.

† *Kerato-conjunctivitis*, in *Giornale d'oftalmologia italiana*, 1863, and *Annales d'oculistique*, t. i. p. 118, 1864. See J. Windsor, *British Med. Journ.*, June 3rd, 1865.

rapidity, Professor Magni determined to excise one of them, and discovered, on examination with the microscope, a quantity of new cells in the midst of a granular mass. Specific treatment caused the new products to disappear after several months only.

The slowness of the cure and the absence of gummy lesions are the doubtful points of this case which induce us to wait for further facts before pronouncing definitely upon the nature of this lesion.

Lesions of the cornea (chronic interstitial keratitis).

The syphilitic ulcer of the eyelids, when it extends as far as the cornea, may produce a change in that membrane; but, independently of such cases, the cornea sometimes undergoes the more direct attacks of syphilis. Hutchinson has shown that a variety of chronic keratitis, peculiar to infancy, is undoubtedly connected with syphilis and not with scrofula, as has been supposed. Rare in cases of acquired syphilis, this affection is, on the contrary, a frequent manifestation of hereditary syphilis, and, for that reason, we purpose giving the description of it further on.

With tardy iritis sometimes coexists a variety of keratitis characterised by the presence of small, circumscribed, whitish points, on the posterior surface of the cornea (deep-seated punctuated keratitis); but we cannot dwell upon this change here, any more than upon the affections of the choroid, which have been studied elsewhere (see Vol. I. p. 200).

Lesions of the optic nerves and retina.—Syphilitic amaurosis.

The syphilitic lesions followed by amaurosis, *i.e.*, the more or less complete loss of sight, may be placed under three heads, according as the osseous system, the optic nerves, or the encephalon are more particularly involved. J. de Vigo and L. Botal quote cases of syphilitic amaurosis following lesions of the bones. “Visum fuit,” says Boerhaave, “lamellam ossis cuneiformis quæ ibi crassa est, exostosi laborasse, unde compressus fuit nervus opticus, et unde etiam amaurosis orta fuit, integris licet cerebro et nervis.”*

* *Prælectiones publicæ de morbis oculorum.* Parisiis, 1748, pars ii. cap. iii. p. 97.

Janin relates a case of eroding syphilitic ulcer of the eyes ;* Astruc has left only very vague data on this subject. Delpech saw a case in which caries of the sphenoid produced blindness. At present no other amaurosis is recognised than that which follows a change in the osseous system. The cases in this category † are not, however, without interest, and are still met with at the present day. The symptoms which they produce differ according as the anatomical localisation affects the orbit or is situated in the interior of the cranium ; the syphilitic lesions of the orbit often produce exophthalmia, the more deep-seated lesions give rise only to the phenomena of compression of the optic nerve. Recent observations have proved that syphilis is capable of exerting a more direct action upon the nervous apparatus of the eye, and, thanks to the ophthalmoscope, we can now diagnose these facts.

In the case quoted by Bayle and Kergaradec, in which several syphilitic tumours occupied the base of the brain, the optic nerves were reduced to half their normal size, and so soft that they broke when touched. In a somewhat similar case related by Courtin, the left optic nerve, from the commissure as far as the optic foramen, was pulpy, reddish, and almost lost in inflammatory products of the meninges ; the left half of the commissure and the corresponding optic tract were diffuent, diminished in size and scarcely distinct. Dittrich has seen the optic nerves transformed into a greyish, villous and fibrous mass. Portal ascertained the existence of a fibrous tumour, of the size of a strawberry, which adhered to the bulb of the optic nerve. We here find, consequently, the two anatomical forms peculiar to syphilis. Nor is this all, for the optic nerve sometimes becomes changed and atrophied in consequence of certain lesions of the hemispheres. Our Observation XXX. is an instance of this secondary manifestation, which appears to us to have been several times overlooked.

The derangements connected with these various changes reveal themselves by physical signs almost identical and by functional dis-

* *Mém. et obs. sur l'œil*, p. 354. Lyons, 1772.

† Compare for the lesions of the cranium or of the orbit: Demours, Sardaillon, Ballonius, Tacheron, Prost, Lallemand, and Verdier, Ch. Bedel, Guérard, Hérard, and Baudot, &c., in the works quoted by G. Lagneau and Gros and Lancereaux. Demarquay, *Traité des tumeurs de l'orbite*. Paris, 1861.

turbances differing little from each other. At the outbreak of the disease, when the patient feels only a slight weakness of vision, but examination with the ophthalmoscope already reveals a change in the optic papilla, the veins are distended and tortuous, the capillary vessels are more abundant, and there is an evident injection, a kind of œdema; later on, the arteries diminish in size, the field of the papilla, somewhat enlarged, with ill-defined greyish borders, contracts, and its colour changes from pink or greyish to white. This is called white atrophy of the papilla. This atrophy, in reality, may result from other causes than the changes in question; but nevertheless its existence should suggest the idea of the possibility of a syphilitic lesion of the optic nerves or of the encephalon.

Under these circumstances the sight gradually becomes enfeebled and sometimes ends by being entirely lost; in the case of secondary lesion (intra-cranial tumour, Obs. XXX.), hemiopia may exist for a certain time.

It is not always easy to know how to distinguish each of the manifestations of which we have just been speaking, to affirm from examination with the ophthalmoscope and from the functional derangement, whether it is a question of a direct or an indirect lesion, of a primary change in the bones, the optic nerves, or the encephalon; fortunately, this distinction is of little consequence, since the same therapeutic indication avails for each case.

The important point, under these circumstances, is to know how to trace out the syphilitic origin of the disease. But, to accomplish this, we must study the patient carefully, for it is by the antecedents and concomitant lesions, and also by the course of the affection in question, that it is possible to succeed in forming a diagnosis which, if not exact, shall, at least, be very probable.

The prognosis of cases of syphilitic amaurosis is unfavourable. These affections being almost incurable, when there is atrophy of the optic papilla, it will easily be understood how important it is to institute an appropriate treatment at an early period.

§ 3. Apparatus of hearing.

Syphilitic deafness has long been known. Paré makes mention of it; * Boerhaave relates the case of an individual who, while

* *Œuvres complètes*, liv. xix. ch. xl. p. 467. Lyons, 1852.

suffering from syphilis, was struck at one and the same time with deafness and blindness; Van Swieten alludes to deafness as the result of certain ulcers of the pharynx caused by the venereal disease, and adds: "Sometimes these ulcers, which spread slowly, as is their wont, traverse the whole length of the Eustachian tube and completely destroy the internal ear. A disgusting ichor flows through the internal ear in the unfortunates whose throats have been eroded to that extent by this cruel disease."*

Astruc speaks in the following terms of the syphilitic affections of the ears: "Lastly, syphilis sometimes causes hardness of hearing and even deafness, either from the destruction of the small bones by caries, or because, being inflamed, they have become incapable of performing their usual functions, or because the acoustic nerves are obstructed by spirits too gross, or compressed by arteries too much distended, or by nodes and ganglia formed in the vicinity of them, or by exostoses supervening in the bones which they traverse," &c.† Leschevin‡ has published on this subject an observation which, without being absolutely demonstrative, nevertheless deserves to be quoted. "A young man of 27, after having had venereal chancres which were treated palliatively in the beginning of 1757, began to feel very acute pains in the right ear; some time afterwards, there appeared a sanious discharge from the meatus auditorius, and as the discharge decreased, the patient thought himself cured. Several months having elapsed, the pains returned and became even more violent than before. Lastly, they were followed by delirium, or rather by true mania which nothing could appease, and the patient died in January, 1758. The meatus auditorius was healthy, but the floor of the middle cavity was pierced and as it were riddled by

* *Commentar. in Boerhaavii Aphorism.*, t. v. p. 369. Compare: Plenck, *De morbi venerei doctrina*. Venice, 1793. Swediaur, *Traité complet de la mal. vénér. ou syphilitique*. Paris, 1801. Cullerier, *Journ. de méd. de Sédillot*, 1814, xlix. p. 202. Itard, *Traité des mal. de l'oreille*, 1821, t. ii. p. 185. Dominel et Leprestre, *Arch. de méd.*, Mars, 1830. Deleau, *Rech. sur les mal. de l'oreille*. Paris, 1838 (Obs. xii.). Davasse, dans *Thèse de Dumoulin*. Paris, 1848, p. 44. Ricord, *Clinique iconograph.*, 1851, pl. xxiv. obs. et fig. iii. Lasègue, *Arch. de méd.*, May, 1858, p. 603. Lagneau père, *Obs. rapportée par Lagneau fils, dans Maladies syphilitiques du système nerveux*, p. 511.

† *Loc. cit.* t. iv.

‡ *Sur la théorie des maladies de l'oreille, &c.*, 1763, dans *Prix de l'Académie royale de chir.*, t. iv. p. 115. Paris, 1819.

caries; all the cavities of the labyrinth and a great part of the surface of the petrous portion of the temporal bone were carious and worm-eaten."

According to Swediaur, syphilitic deafness may be caused by changes in the bones, by abscesses of the brain, or by ulcers which affect the orifices of the Eustachian tubes. To these lesions, B. Bell adds pustular eruption of the meatus and of the external auditory canal. Larrey* and Itard† have quoted cases of syphilitic deafness resulting from a change in the internal ear. Vering‡ and J. Frank mention having seen cases of the same nature. "It results from the cases of internal otitis collected by me," writes the latter author, "that this disease most generally affects syphilitic subjects who are exposed to extreme injuries and cold."§ On the other hand, Kramer|| asserts that it is not proved that syphilis has ever been the active cause of changes in the auditory nerves. Lagneau and Gibert have given cases of syphilitic deafness, without stating what had been the starting-point of the affection. In an interesting article upon the diseases of the ear,¶ Triquet admits a form of syphilitic otitis, with an insidious onset and slow evolution, characterised by the presence of pustules having their seat upon the membrane of the tympanum, of which they cause perforation in some cases. Nocturnal pains and a cachectic condition accompany this affection. But, since the otitis observed by Triquet was met with during the secondary period, there is reason to believe that that author confounded the chloro-anæmia of that period with the cachexia of the tertiary period; and the description which he gives appears to refer solely to eruptions of the mucous membrane of the meatus auditorius externus. Like most of his predecessors, Triquet does not give any details, so that the information concerning syphilis of the ear consists almost entirely of assertions which, although made by men of the highest merit, cannot suffice for the construction of a scientific theory. But what is wanted in such a case are facts, material proofs, without which the theory cannot be set up.

* *Mémoires de chirurg. militaire*, t. ii. p. 444.

† *Traité des maladies de l'oreille*, 1821, t. i. pp. 289, 400.

‡ *Aphorismes*, &c., pp. 16, 22, 34.

§ *Traité de patholog. interne.*, trad. fr., t. iv. p. 22.

|| *Traité des maladies de l'oreille*, trad. fr. de Ménière, p. 34. Paris, 1848.

¶ *Journ. de méd. et de chirurg. prat.*, July, 1863, p. 306.

The field of the syphilitic lesions of the apparatus of hearing has not yet been sufficiently explored; fresh researches must be made; but, in the meantime, let us sum up our actual knowledge on the subject.

Lesions of the external ear.

We have stated a short time ago that Triquet ascertained the presence of pustules upon the surface of the membrane of the tympanum. Vidal had opportunities of observing cases in which these pustules occupied both meatuses; on one side were seen a slight oozing and a prominent patch; on the other side, the meatus auditorius was ulcerated, of a dull red or brown colour, and there was a discharge from the ear; the hearing was not at all affected. B. Bell also mentions the development of pustules at these same points. Baumès points out hardness of hearing and discharges of a greenish yellow colour. Ulcerations having a syphilitic character have been observed by several authors; some, easily seen, occupied the entrance to the meatus auditorius; others, more deep-seated, could only be seen by the aid of the *speculum auris*. These latter have sometimes caused perforation of the membrane of the tympanum.* Thus the meatus auditorius externus may become the seat of most of the cutaneous manifestations of syphilis, without excepting mucous patches, which are the most frequent of all these manifestations and which sometimes become covered with soft and fungous vegetations.

Lesions of the middle ear.

Independently of the cases in which the middle ear may become changed from the extension of syphilitic lesions of the pharynx, direct inflammation of that cavity may be met with. In a case given by Betz,† the membrana tympani was thickened and perforated in about one-half of its extent; the malleolus, which was scarcely recognisable, adhered at its lower end, by means of a false membrane, to the parietes of the middle cavity; the promontory was deformed, the cavity of the middle ear contained pus, and the mucous membrane was everywhere thickened and infiltrated, but not ulcerated.

* Kramer traduit par Ménière, *loc. cit.*

† Betz, *Vollständige Taubheit nach Syphilis*, *Memor.*, viii. 5, 1863; and *Schmidt's Jahrb.*, t. cxxi. p. 346.

Although this case leaves some doubt as to the starting-point of the change, there is nevertheless reason for thinking that the cavity of the middle ear, on account of the texture of the parts composing it, is favourably disposed to undergo the influence of syphilis, and that to the consecutive lesions must be added direct lesions capable of causing deafness.

Lesions of the internal ear.

Whether on account of the difficulty of the examination, or from want of observation, no case as yet shows what modifications the soft parts of the internal ear may undergo in syphilis: all that we know is, that osseous lesions, exostosis or caries, are, in such cases, the usual causes of deafness. Already pointed out by Astruc, these causes have been indicated by Valsalva and other authors.* Ménière also quotes several cases of syphilitic lesions of the ear characterised by a thickening of the perichondrium or by hypertrophy of the temporal bone.†

In addition to the influences which it undergoes on the part of the osseous system, the auditory nerve is sometimes affected directly, often even before leaving the cranial cavity. In a patient of Rayet's,‡ the deafness had for its very probable original cause a lardaceous tumour of the size of a pigeon's-egg, which had developed itself in the middle fossa. Cases of this kind are, however, rare. In the Observations CIX. and CXXIX. of our *Traité des affections nerveuses syphilitiques*, the deafness appears also to have had its origin in an intracranial lesion; but in one of these cases, recovery took place, and in the other it is not mentioned that the auditory nerves were affected.

To sum up, the meatus auditorius externus and the Eustachian

* Valsalva, *De aure humana tractatus*, 1707. Compare: Al. Trajan Petronius, *Aurium et oculorum lesiones*, in *De morbo gall. tract.*, 1728. Fabre, *Traité des mal. vén.* Paris, 1773, p. 185. John Pearson, *Observ. on the effects of various art. of the materia med. in the cure of the lues venerea*. London, 1807. Larrey, *Mém. de chirurg. et Camp. milit.*, t. ii. 412, 1812. Delpach, *Chirurg. clinique de Montpellier*, February 1st, 1844. Landry, *Gaz. hebdom. de méd. et de chirurg.*, March 11th, 1859.

† Bedel, *Thèse de Strasbourg*, 1851.

‡ *Ann. de thérapeutique et de toxicologie*, Dec., 1847. Compare: Briquet, *ibid.*, April, 1847. Guarinoni, *Consilia medicinalia*. Venetiis, 1610, pp. 27-44.

tube sometimes become the seat of papular or ulcerative eruptions which may interfere more or less with the functions of the organ. These eruptions, which generally form a part of the secondary period, do not differ from the syphilitic manifestations of the skin and mucous membranes. The middle ear, the internal ear, and the auditory nerve, although susceptible of primary and direct manifestations, are, most frequently perhaps, affected in consequence of a change in the petrous portion of the temporal bone. This is, at least, the conclusion to be drawn from the facts known.

Lesions so various necessarily give rise to a variable symptomatology; but we can only speak of the more frequent symptoms. The tinnitus aurium already pointed out by Gabriel Fallopius, who claims to have been the first to observe it, has since been mentioned by A. Paré and many other authors. It is generally only the commencement of the deafness, as in a case given by Ad. Genselius;* it is usually followed by more or less complete loss of hearing. Most frequently unilateral when there is a change in the bones or in the pharynx, deafness sometimes shows itself simultaneously on both sides. Pains more or less violent with nocturnal exacerbations are sometimes felt in the neighbourhood of the ears. To these symptoms must be added those which result from the existence of material lesions of the bones or of the pharynx; tumefaction, fistulous openings in the neighbourhood of the mastoid apophysis, and more or less extensive destruction of the pharynx and of the Eustachian tube.

These various derangements are almost the only signs capable of guiding the physician in the diagnosis of the syphilitic affections of the ears; in other words, this diagnosis is based, not upon the functional derangement of the hearing, but upon an exact knowledge of the concomitant manifestations. In the absence of these manifestations, when we have to deal with deafness dependent upon a deep-seated lesion of the bones or upon a modification of the auditory nerves, the osteocopic pains and the coexistence of neuralgic spots or of localised paralyses are circumstances which may serve to

* *Academiae Cesareae Leopoldino-Carolinae nat. cur. Eph.*, 1717. In reference to a venereal subject whom he was treating, this author says: "Incipit laborare cum cephalalgia imprimis nocturna lancinante contumacissima, tinnitu aurium continuo et tandem surditate." *Centuria*, xi. *Obs. LXXXIV.* p. 349.

enlighten the physician. In reference to the differential diagnosis, let us mention the existence of a pretty frequent suppuration which may serve to characterise scrofulous affections, and the absence of suppuration and of ulcers of the mucous membranes as indicating rather the rheumatic nature of these same affections.

The prognosis of the syphilitic lesions of the ear vary necessarily with the seat, extent, and nature of the organic modification. When limited to the meatus auditorius externus, these lesions are of little consequence, and have no other danger than that of perforating the tympanum. They are more serious when the inflammation, extending to the middle ear, produces exfoliation of the small bones, &c. With lesions of the bones or deep-seated otitis, the hearing is still more compromised; nor is it less so when the auditory nerve is primarily or secondarily affected.

In any case, when an apparatus so delicate as that of hearing is concerned, celerity is the most important element of the treatment; otherwise, we run the risk of seeing irremediable lesions appear. In such cases, the trained eye is most valuable.

CHAPTER V.

MODES OF EVOLUTION.—DURATION.—TERMINATIONS.—RELAPSES.—
TRANSFORMATIONS.—COMPLICATIONS.

THE study of the evolution of syphilis is not the least interesting part of its history, and, although we have sought, in the preceding description, to follow this disease in its progressive course, it is not without advantage to revert here to the order of succession, and to the filiation of these phenomena. We shall follow, therefore, with a rapid glance their development and concatenation.

The syphilitic poison, when brought into contact with the economy, has entered it by the gate which science or chance has opened to it; the absorption takes place and advances insensibly to the most deep-seated parts of the organism, the whole of which undergoes its influence. At the same time, being submitted to the process of a kind of mysterious conception, it becomes modified and developed, and its presence and effects are soon revealed externally by a first manifestation.

At the point of contamination appears a lesion called primary, at first altogether local, but which is soon accompanied by other manifestations, and especially by multiple and painless adenopathies.

After a period of arrest, which is usually very short, varying from six weeks to two months, starting from the appearance of the primary lesion, there are seen to supervene, in the majority of cases, eruptions of the skin and mucous membranes, disseminated and general eruptions the chief characteristic of which is, to be superficial, to leave no appreciable trace of their passage behind them, and to show themselves by successive bursts of from one to several months' duration, with an interval which is usually very variable, by virtue of individual conditions and especially of various accidental causes to which these manifestations or their relapses are subordinate.

This is the course of things during the whole period of general eruption, or of secondary localisations. What the extent of that period may be, is a point very difficult to decide. It may be said,

nevertheless, that the duration of this important phase of syphilis is of several months or of some years. Tertiary symptoms rarely manifest themselves, in fact, before the end of the first year, so that the period of the secondary symptoms may have a duration of from six to eight months, at least in adults, for, in infants, the succession of these symptoms is more rapid. However, relapses of rubeolous or papular syphilide sometimes show themselves after one, two, or even three years, counting from the commencement of the disease, if no deep-seated gummy lesion has yet appeared. In these cases, the secondary period may have a duration of two or three years; but it is not common to see it prolonged much beyond that period of time.

The symptoms which follow, or tertiary symptoms, do not, in general, encroach upon the secondary symptoms, except in certain cases of severe syphilis, in which they are seen to appear at the same time with the latter. Most frequently there is, between these two periods, a time of arrest which may vary between some months and several, even ten or twenty years. During this period of repose, the diseased organism has gradually undergone, without giving any signs of its deterioration, a modification more or less profound, which will reveal itself by changes differing greatly from those which preceded them. It is then that we must not be too hasty in believing a cure which may prove to be fallacious. It is also important to know that this latter phase of syphilis advances by jumps only; one symptom succeeds another with an interval generally of perfect health. When this suspension of the tertiary localisations of syphilis lasts for several years, ten, twenty, or even more, it has been called by some authors the *latent condition* of syphilis, a condition in which they generally admit that the active principle of the disease slumbers, as it does not betray its presence by any apparent sign. We do not know whether those authors use the term active principle as synonymous with virus; but we wish to point out that it is precisely in the last period of the disease, when the blood and morbid products are no longer inoculable, that we observe these intermissions, too, often deceptive, and after which we are astonished to see reappear, from some cause often most insignificant, the symptoms of a disease which had appeared to be entirely extinct. This singular, insidious course, which is not without its analogue in constitutional diseases, and which belongs also to hereditary syphilis, has not escaped the attention of the greatest physicians. Astruc, Sanchez, Rosen, Fabre and many other

observers have recognised it. J. L. Petit said in reference to syphilis: "A man may have this disease for twenty years without its manifesting itself in such a manner that no doubt can be entertained as to its existence."*

Thus syphilis has not a regularly continuous evolution. Above all a chronic disease, it is sometimes accompanied in its course by acute symptoms; usually intermittent, it proceeds by stages which are sometimes very long, until some exciting cause intervenes to give a fresh impulse to the evil; it presents this singular phenomenon, one of the most impenetrable mysteries of human pathology, of accomplishing its evolution by successive periods, in the intervals of which the health continues to be apparently perfect. The overriding of its periods is rarely observed.

Such is the most complete and most usual evolution of the disease. But the various phases which have been mentioned do not exist always and in all cases. It may happen that one or the other is wanting. And if it be doubtful whether the period of the primary lesion has ever failed, the same does not apply to the period of general eruption: the latter not revealing itself by any phenomenon, the patient passes without appreciable transition from the primary lesion to tertiary lesions, sometimes even to visceral affections. If it were admissible to rely on this point solely upon the assertions of the patients, such would often be the course of things, since, in twenty-four cases of visceral syphilis which we have ourselves observed, we were unable, in about ten of them, to discover the least trace of a symptom intervening between the local eruption and the lesions of the internal organs. So that, setting aside all theoretical views, there is reason for asking whether the eruptions of the skin are not a preservative in reference to ulterior manifestations. Under certain circumstances, in fact, it is the last period which fails. The general eruption once over, syphilis ceases as if it had completed its entire orbit. Comparable in this respect to certain cases of variola which never arrive at suppuration, it may justly bear the name of *syphiloid*. In these cases, which are far from being rare, syphilis is but an abortive disease; slight and benignant, it does not leave behind any troublesome trace of its passage. It is impossible to lay too much stress upon this point. At the present day especially,

* Fabre, *loc. cit.* p. 233.

when syphilis still inspires exaggerated fears, it should be known that this disease becomes dissipated completely in a great number of cases after the cessation of the cutaneous eruptions, and perhaps sometimes even with the primary lesion.

At other times, the course of syphilis is notably accelerated and there is no longer any interval between the symptoms, which succeed each other without a break, the secondary symptoms supervening at the same time as, or shortly after, the primary lesion, and being themselves followed immediately by the tertiary manifestations. This form of syphilis, which has received the name of galloping or acute, is not uncommon in infants, by reason, no doubt, of the activity of all the organic functions. It sometimes attracts attention by the existence of the three orders of symptoms, primary, secondary, and tertiary; this has at least been seen by Dr. H. Roger,* in a case which he communicated to the Medical Society of the hospitals. But it is also observed in adults without the explanation of it being easy to seize, as it is not possible to invoke here, as in the infant, the activity of nutrition and the rapidity of the molecular changes. A case which we have had the opportunity of observing recently under the care of our teacher, Professor Grisolle, is an instance of this rapidity of course.

OBS. LIII.—A young woman of 27, a cook, apparently strong and of excellent constitution, contracted syphilis in May, 1864. She had a chancre on the inner and upper surface of the left labium majus. She soon afterwards felt lassitude, and muscular and articular pains, and had an eruption which was probably papular. She was ordered purgatives. In January, 1865, there appeared two buboes in the left groin, for which she was ordered frictions with mercurial ointment, and took one hundred pastilles. In February, she had angina and bronchitis, and mucous patches on the genital organs.

In March, an eruption appeared, which commenced at the posterior part of the fore-arm, and afterwards became general, invading the hairy scalp, the upper part of the neck, the thighs and even the trunk. She had fever, with paroxysms in the evening, lassitude, cephalalgia, giddiness, muscular and articular pains, anorexia, and dislike to food.

April 11th, 1865.—On her admission into the Hôtel-Dieu, under the

* Roger, *Bull. de la Société méd. des hôpitaux de Paris*, t. iv. fasc. v. fol. 429. Compare: Sicard, *Gaz. des hôpit.*, 1863, p. 509. *Ibid.*, 1867. J. F. Heyfelder, *Ueber galopirende Syphilis* (*Österr. Zeitschrift für prakt. Heilk.*, No. 3, 1858).

care of M. Grisolle, she had a crusty papular eruption upon the hairy scalp, simply papular at the roots of the hair, of a red colour, resembling lean ham; the papules presented at their base the well-known white ring. On the back were several disseminated papules; in front of the sternum, copper-coloured spots covered with epidermic pellicles; similar spots, scarcely prominent, of about one centimeter in extent, upon the upper part of the thighs. On the fore-arms were disseminated spots little or not at all prominent, of the extent of from several millimeters to one centimeter and a half, and covered, like the preceding, with a simple layer of glittering epidermic lamellæ. This eruption showed everywhere the greatest analogy to psoriasis guttata, but this analogy was especially striking upon the fore-arms. In the left hand were observed three or four papules of the same kind. She had inguinal and cervical adenopathies, but no lymphangitis of the arms; the epitrochlean glands were indurated and moved under the finger. There was redness of both the pillars of the velum palati, and slight ulceration on the surface of the left tonsil. She was ordered to take two of Dupuytren's pills every night.

April 20th.—The fever had ceased, but the cephalalgia persisted; it was nocturnal and caused insomnia. The eruption was of a dull yellow colour; the appetite was still small; the redness of the throat had not disappeared, but the ulceration of the tonsil was partly cicatrised. Since the previous day, the patient complained of slight itching about the papular or squamous eruption; upon one of the labia was a pimple from which oozed a serous fluid. The treatment was continued, but nevertheless, after a few days, the improvement stopped. Under these circumstances, the pills were replaced by others containing proto-iodide of mercury, to which were afterwards added iodide of potassium and sulphur baths. The patient was at the same time put upon a tonic regimen. No change took place, however, except that the eruption became larger and more abundant, and that the ulcer of the throat cicatrised.

June 15th.—M. Grisolle ordered corrosive sublimate baths, and continued the proto-iodide of mercury.

July 1st.—There was marked improvement, the scales had fallen off and the spots were gradually disappearing. On the 10th, the eruption had almost vanished.

July 15th.—The patient complained of pain in the tongue; on examination there were found, at the posterior part of the dorsal surface of that organ, three small, firm tumours, of the size and shape of a bean, situated superficially and very slightly prominent. She again lost her appetite and had a furred state of the primæ viæ. An emetic was given, and the iodide of potassium resumed and continued. A month later, the patient no longer presented any syphilitic manifestation; there remained only, in the situation of the gummy tumours of the tongue, an epithelial desquamation in the form of small, elongated, red spots.

A certain degree of acuteness and still more of irregularity shows itself in the course of cases of syphilis occurring in seaport towns

and in cold and damp countries. These are the cases to which the name of malignant syphilis is given, on account of the tendency to ulceration or even to suppuration shown by the anatomical lesions which characterise them.

We have hitherto been investigating the course of syphilis independently of any treatment. An important and much contested question remains to be examined at this moment. What is the influence of therapeutic agents upon the evolution of the symptoms of this disease? In the opinion of a certain number of authors, specific treatment has the effect of retarding the appearance of the secondary symptoms. But for a long time this was a mere assertion which, to pass into the domain of acquired truths, required the sanction of facts. Bassereau has studied the problem; making a comparative abstract of a certain number of cases of syphilitic erythema in patients who had not been subjected to any general treatment and in other patients treated previously, this skilful observer found that the treatment had almost always retarded to an appreciable extent the development of that syphilide.* Consequently, treatment may disturb or at least retard the natural course of the disease, or the period of the appearance of the symptoms. Ricord, Bazin, and other writers of not less authority partake of Bassereau's views. But this question requires to be studied afresh. Side by side with the treatment is the hygiene of the patient, which appears capable of influencing the course of syphilis; but this is a circumstance to which Bassereau attaches little importance.

The general duration of syphilis is so variable that it is impossible to determine its limits. While this disease, in some cases, completes its evolution in a few months and with a course comparatively acute, it is seen, under other circumstances, to be prolonged during the life of the individual, or even to be transmitted to several generations. To endeavour, therefore, to appreciate this duration is extremely difficult. This problem calls in question, moreover, the possibility of recovery from this disease: let us see what is to be believed on this subject.

Recovery, death, or a stationary condition, such are the various modes of termination which we have to examine. Recovery, and by this word we mean the final cessation of the disease and not the mere disappearance of such or such a symptom, is, we venture to assert,

* *Traité des affect. de la peau symptomat. de la syphilis*, p. 178.

the most usual mode of termination of syphilis. This doctrine, however, is not that most widely spread, and the opposite one has long been defended by highly scientific notabilities. Vidus Vidius said that syphilis accords truces without ever making peace. "Magis inducias facit quam pacem." Baglivi doubts whether this disease, once introduced into the body, can be entirely expelled from it. "Lues venerea, semel recepta in corpus, difficiliter postea deletur; ejus character adhibitis specificis mitescit, sed non extinguitur. Imo post triginta et plures annos sub specie aliorum morborum reviviscit, et medicos decipit, causam morbi ordinariam putantes, cum revera tamen ab excitato noviter venereo fermento dependeat."* More recently, Hunter,† without denying the possibility of recovery from syphilis, said that mercury did not destroy the syphilitic action when once it was established. Cazenave‡ admits the cure of primary syphilis but not of secondary syphilis. From the latter, he says, patients do not recover; they have acquired the syphilitic temperament and must live on with it, as others live with the lymphatic temperament. Ricord, after having participated in the opinion of those who think that the syphilitic diathesis, once established, never becomes extinct, expressed himself later on, on this subject, in different terms. "As for me, although having, in my turn, ascertained this melancholy truth, I do not, however, infer the absolute incurability of syphilis, as it has been sought to show that I assert. I ask myself whether syphilis may not become cured, leaving behind it, like small-pox, only a preservative modification." With this latter hypothesis, the syphilitic impression would persist indefinitely, even after the final cessation of any manifestation.

It would, perhaps, be difficult to meet with partisans of the doctrine which admits that syphilis is susceptible of cure, for Fernel, A. Paré, and other authors who appear to believe in such cure, mean thereby rather the cessation of such or such a manifestation than that of the morbid essentiality properly so called.

It is astonishing that the question which we are discussing should have attracted so little attention, and that, in works the most important and most complete, it is not even mooted. Latterly, it has been propounded. Wishing to show that syphilis may be cured,

* *Præcos med.*, lib. i. p. 95.

† *Œuvres complètes*, trad. de Richelot, p. 544.

‡ *Moniteur des hôpitaux*, Aug. 19th, 1865.

Diday endeavours to prove that this disease is a poisoning and not a diathesis;* but before placing amongst poisonings syphilis which other authors, Ricord for instance, places in the group of diatheses, it would be desirable, first of all, to come to an understanding as to the meaning of the terms diathesis and poisoning. This mode of procedure would be out of place here; but we may arrive otherwise at recognising that syphilis is susceptible of cure. The observation which teaches us that a great number of individuals manifestly syphilitic end by enjoying very perfect health, without ever presenting, any more than their descendants, the least taint of syphilis, teaches further that this disease reproduces itself, and sometimes becomes double in the same individual. But, experiment having shown that syphilis is no longer inoculable in an infected subject, it must be admitted that, in cases of double infection, recovery took place. The question of double syphilis was already discussed by the syphilographers of the sixteenth century. A. Lecoq † seems to have admitted it; but it is doubtful whether he was speaking of anything else than the relapses of secondary or tertiary symptoms. Barth. Maggi (1550) believed without hesitation that an individual may be affected with general syphilis by two successive contagions. Brassavole regards the case as not uncommon, as he believes that a first infection predisposes to a second. Vidus Vidius (1556) appears to believe that once cured of the *French disease*, an individual no longer contracts the lesions which we call primary. A. Trajan Petronius (1565) says that those who have once been cured of the *French disease* by guaiacum are less disposed to take that disease.

The opinion of Brassavole prevailed for a long time, and it has not unfrequently been repeated since then that a first syphilitic infection predisposes to a second. Ricord justly opposed this view, and, never having met with a single case of double infection, has denied that such cases can occur. Recent cases have sufficed to prove how far this denial was exaggerated.

Follin quotes three cases of double infection.‡ A. Boulongne gives two fresh cases.§ Diday succeeded in collecting several in-

* *Leçons sur le chancre*, p. 227, 2^e édit.

† *De lue hispanica*, 1540.

‡ *Traité de pathologie externe*, t. i. p. 739.

§ *Recueil de mém. de méd. et de pharm. milit.*, 3^e série, t. ii. 1859, p. 428.

stances borrowed from various authors.* These cases indicate the appearance, from eleven to thirteen years after a primary infection, sometimes of an indurated chancre without enlargement of glands, sometimes, which is much more conclusive, of an exanthematous syphilide (a case by H. Lee). I am far from wishing to assert that all these cases are to be accepted without analysis; but it is sufficient for me that a certain number of them cannot be refused, to admit the possibility of the final extinction of syphilis in an infected organism, in a word, of its cure. How then did this cure take place, and what are the means which enable us to recognise it?

In reference to the first point, the answer is simple; syphilis, like typhoid fever, variola, scrofula, like all diseases in short, ends by yielding to the efforts of nature alone, that is to say, the organism frees itself from it at a certain period and in a spontaneous manner, treatment, when it intervenes, acting only upon the manifestation which it combats and not upon the disease itself. This thesis, which we purpose developing further on, already finds support in the researches of Diday. In fact, eighteen syphilitic subjects treated without mercury by that author appear to have been completely cured. I am quite willing to admit that these cases are not free from objection, on account of the short space of time (three years and a half to sixteen years) elapsed since the disappearance of the last syphilitic symptom; but if this space of time be not absolutely sufficient, since tertiary syphilitic manifestations are observed to show themselves ten and twenty years after the primary or secondary manifestations, it is none the less incontestable, that as regards its termination, syphilis does not differ from any of the diseases the radical cure of which belongs to time and hygiene rather by far than to therapeutic agents.

As regards the second point, that of knowing what is the period in the evolution of syphilis at which the modified organism succeeds in re-entering upon its normal and physiological condition of life, I admit, and therein I agree with Diday and Bazin, that it is not possible to regard an individual as safe from syphilitic affections until he has passed through all the phases of the disease. However, as cases of typhoid fever are seen to recover at the end of the second

* *Histoire naturelle de la syphilis et Archiv. de méd.*, 1862. Dardel gives a fresh instance: *Des réinfections syphilitiques*, dans *Gaz. méd. de Lyon*, August 16th, 1865.

stage, and cases of small-pox to become arrested at the end of the eruptive period without proceeding to suppuration, so cases of syphilis may be met with which terminate immediately after the period of secondary symptoms, and perhaps after the primary lesion. Nevertheless, here as in every other disease, it is always at the end of a stage that the evil ceases; acute or chronic, the disease proceeds none the less by periods modelled, so to speak, after the same type. These periods are inherent in the organism, which reacts by the contact of the morbid agent: the quality and mode of action of that agent are the causes of the differences observed.

In reference to a knowledge of the signs which enable us to judge of the cessation of the deleterious impression made by syphilis upon the organism, let us confess that this is one of the questions which interest most the hygienist and clinical teacher, and also one of the most difficult problems of general pathology. What criterion do we possess for asserting the cure of a disease? The recognised completion of all the phases of that disease. But this does not suffice, for, under various circumstances, when a disease has run its whole course, the organism, for a longer or shorter period, still feeling the blow which it has received, gives evidence of the impression felt by its inaptitude to contract afresh the same disease. But, if certain forms of poisoning form an exception to this law, syphilis does not escape it, and if we would absolutely find the criterion we are seeking, there would be no other means than to have recourse to inoculation; but it is too evident that this means is anything but applicable. Thus, an exact knowledge of the cure of syphilis cannot be acquired, the more so as this cure sometimes occurs without the disease having passed through all its periods. In this respect, however, it is possible to arrive at presumptions. It appears to us that the cure of syphilis is to be regarded as probable when, in an individual who has passed through all the phases of that disease, the strength has continued at the full for several months, and *à fortiori* for several years, and no symptom has appeared in spite of the action of the most usual provoking causes, such as venereal excesses, hard drinking, cold, &c. But even under these circumstances, the physician, to avoid compromising his knowledge and reputation, will do well to refrain from giving a positive opinion, and so long as the slightest indication of cachexia remains, will not promise anything, bearing in mind always the frequency of relapses of syphilitic affections, even in the tertiary form. Moreover a sign often tardy, but

none the less important when it exists, is furnished by the healthy condition of the descendants. It is easy to understand that a father or a mother previously affected with syphilis, and whose children enjoy perfect health, may be regarded as being safe from any manifestation of that disease.

Another question presents itself here, which must also not be passed over in silence: Is syphilis susceptible of degenerating or of becoming metamorphosed into a different morbid species. On this point, a great number of authors of the last centuries, and amongst others Baillou, Sauvages, Bosquillon, and J. Frank, have not hesitated to answer in the affirmative. According to them, syphilis may be transformed into rheumatism, gout, tuberculosis, or carcinosis; but when we read the account they give of the various metamorphoses, we soon come to the conclusion that what they regard as a transformation of syphilis is nothing else, in reality, than syphilis itself, arrived at the most advanced period of its evolution, and directing its action to the viscera. In a word, most of the cases which have served those authors for the formation of their theory of the transformations of syphilis may be regarded as cases of visceral syphilis.

However this may be, the vague data and ill-supported opinions of the above-named observers must have served the detractors of syphilis, who could easily refute assertions generally devoid of any anatomical confirmation. It is thus that observations ill interpreted, although exact, may have been injurious rather than useful to the cause they were intended to support. Hunter* felt called upon to discuss the point at issue, and sided with an opinion in which we entirely agree. "Syphilis," he says, "never becomes mixed or confounded with other diseases; it never terminates in any other affection; at least this is extremely rare, although the contrary has been asserted." And further on he adds: "It is very probable that venereal affections may become the cause of other affections. I have seen a chancre act as the immediate cause of an erysipelatous inflammation. . . . The chancre here acts solely as an ordinary irritant, independently of the specific nature of the disease." More recently, Lugel† and Ricord have again maintained, in accordance with

* *Complete Works*, trad. franç. de G. Richelot, *Syph. constit.*, p. 532.

† *Recherches et observ. sur les causes des maladies scrofulenses*, p. 117. Paris, 1844.

Astruc, that certain scrofulous lesions may proceed from syphilis, as its direct descendents; but the cases which they give in support of this proposition are neither numerous nor conclusive, which has not, however, prevented this view from finding credit with a certain number of physicians. In reality, it is not rare to meet with, in the descendents of syphilitic subjects, morbid manifestations having a certain analogy with those of scrofulosis; but, on closer examination, we see that they have a still greater resemblance to the manifestations of syphilis. And it is erroneously that certain lesions which do not belong to it have been attributed to the strumous diathesis, as, for instance, that form of keratitis which the observations of Hutchinson have justly connected with hereditary syphilis. (See further on.)

These reflections are applicable to the pretended transformations of syphilis into cancerous or tubercular disease. This transformation never occurs, and when, in the course of syphilis, tuberculosis is seen to develop itself, it can, at the most, be admitted, as we shall explain further on, that this latter disease has been occasioned by the debilitation which the first has produced in the organism. It is important to know that the morbid unities, like the natural species, do not become transformed. Syphilis is always itself, and never becomes scrofula or tuberculosis.

Syphilis which does not become cured may remain *in statu quo* for a period which is sometimes very long, and then it is susceptible of becoming progressively weaker in the descendents by the simple fact of the multiplicity of the transmissions; or else it causes the death of the individual it has attacked.

Death, a mode of termination comparatively little frequent in the disease of which we are treating, and still more rare at the present day than in the fifteenth century, is more common, however, than the most skilful syphilographers formerly believed, when syphilitic lesions of the viscera were still unrecognised. Exceptional in the earlier periods of the disease, it is, so to speak, the exclusive privilege of the last; it has for its immediate cause either various visceral lesions which interfere with the functions of organs indispensable to life and which often end by producing cachexia and marasmus, or various intercurrent affections, complications always serious on account of the extreme debilitation into which they plunge the economy.

The affections of the heart, the brain, the liver, and the kidneys

are, of all the manifestations of syphilis, those which most frequently have a fatal termination, which is easy to understand by reason of the functional importance of the organs diseased. Slow in some cases, death is at other times rapid and almost sudden, chiefly when the heart, as seat of the morbid localisation, is dilated and deprived of most of its contractile elements. The deep-seated affections of the larynx and trachea also sometimes cause sudden death. The lesions of the lungs and those of the liver are, in this respect, less dangerous; they produce considerable wasting and generally slow death. The direct or indirect lesions of the nervous system vary, in the point we are now considering, according to their different seats in one or other of the principal centres; this is a purely physiological fact. With the exception of the visceral lesions, the manifestations of syphilis rarely prove fatal of themselves.

Of all the intercurrent affections which may complicate syphilis and hasten its termination, pneumonia and erysipelas are by far the most frequent. This fact, which results from an examination of the majority of the known cases of visceral syphilis,* has long attracted our attention. As early as 1861, while an epidemic of erysipelas prevailed in the Paris hospitals, I observed that a certain number of patients who succumbed to that disease in the practice to which I was attached were affected with syphilitic lesions of the viscera. Since that time, I have remarked that, even in the absence of any kind of epidemic, visceral syphilis is frequently complicated with erysipelas, and that this always serious disease most frequently carries off the patients.†

It is difficult to explain the appearance of this erysipelatos complication which is observed in other diseases with cachexia. I can here only make known my ignorance. In a study so vast as that with which I am occupied, it is always desirable to mention the desiderata and the things unknown.

Pneumonia takes a place by the side of erysipelas as an ultimate complication of syphilis; it is met with, in fact, in a great number

* Compare the observations of Meyer, Tünel, and ourselves.

† A patient I had the opportunity of seeing in the practice of Dr. Hérard is the only one, so far as I know, who has recovered from erysipelas supervening under these circumstances. In three cases of my own, the erysipelas commenced in the pharynx, the mucous membrane of which was ulcerated, and spread thence to the face, sometimes by the ears, sometimes by the nasal fossæ.

of cases, and always with characters sufficiently peculiar to require pointing out. Like most of the secondary affections, it does not generally occasion any marked reaction; it develops itself slowly and insidiously, and if the patient present some vital resistance, it may have a comparatively long duration, and, consequently, differ in its course also from most pneumonias. To sum up, syphilis is to be regarded as a disease in the course of which secondary erysipelas and pneumonia frequently supervene; whence this clinical rule, that whenever one or other of those affections presents itself in an individual who is debilitated and cachectic, and without any well-known cause, the physician should think of the possible existence of visceral syphilis. It is not impossible, doubtless, that other lesions may put an end to the lives of individuals suffering from tertiary syphilis; but hitherto there have been few instances of any other kind of complication.

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Hereditary syphilis, although partly recognised by some of the syphilographers of early times, has only been really studied since the end of the last century.

Paracelsus (1529) spoke in clear terms of the hereditariness of syphilis, but knew little of the disorders which it produces :—"Est morbus fœdus (morbus gallicus), se ad alios propagans, alios contaminans, et magis hereditarius, quam lepra.—Quique luem gallicam partu accipiunt, ut infantes, non possunt ab hoc contagio liberari,—crescit morbus cum infante, et pro miasmitis virtute modo citius, modo tardius erumpit." Augier Ferrier (1553) was not more advanced on this point :—"Cum in utero morbus contrahitur, tanquam hereditarium fit malum, et tanquam corruptum elementum una cum paterno vel materno semine infunditur; aut, si mater a die conceptionis in morbum inciderit, communicatis fœtini vitiosis infectisque humoribus, primæ conformationis facultates, actiones, organa corrumpi necesse est." Peter Haschard (1554) recognised a double origin of syphilis, contagion and generation, and writes, in reference to this latter mode of transmission :—"Per generationem vero, quoniam hic morbus humores vitiat et corrumpit; unde semen corruptum qui sic affecti sunt, et ex hoc proles vitata ac corrupta procreatur" G. Fallopius is more explicit, and says :—"Preterea videbitis puerulos nascentes ex femina infecta, ut ferant peccata parentum, qui videntur semicocti." Although this passage was not intended by the author to do more than to make known the parts of the body which may be primarily affected, yet, as Diday has remarked, the epithet *semicocti* shows plainly enough that already at that time the poison exercised its influence upon the child during intra-uterine life. Lastly, we give an observation by Rondelet (1560) :—"Ego vidi," writes that author, "puerum nasci totum copertum pustulis morbi gallici."

Paré's opinion upon this subject is easy to interpret, for we read in a passage of his book (chap. xxxiii.) :—"Children are often seen to leave their mother's womb having this disease, and, soon after, having numerous pustules upon their bodies." In the seventeenth

century, L. Goyon Dolois, de Blegny, Musitan, and Garnier admitted the hereditary transmission of syphilis, and this fact is accepted by the principal syphilographers of the eighteenth century, Fabre, Boerhaave, Van Swieten, Astruc, Brunner, Raulin, &c. But in spite of the symptomatic description which Rosen gives of hereditary syphilis, and in spite of the therapeutic indications furnished on that point by Levret, a very distinguished accoucheur, the knowledge acquired was, no doubt, thanks to the exaggerations of Sanchez, on the point of falling into oblivion, when, in 1780, a special hospital was established at Vaugirard for pregnant women affected with syphilis and for their children. From that moment dates a new era in the history of hereditary syphilis. That era, with which are connected the names of Faguer, Doublet, Pelletier, Leblanc, Bertin, Mahon, and Cullerier, has given us a knowledge of the chief external manifestations of this disease. For our own day was reserved the making known of the more deep-seated or visceral lesions. Trousseau and Lasègue, Depaul, Gubler, P. Dubois, Desruelles, Nat. Guillot, Diday, Putegnât, &c., have contributed to our knowledge on this latter point.

PERIOD OF APPEARANCE.

Amongst diseases, those which may be called virulent have, more than others, perhaps, the privilege of appearing at the moment of birth or soon afterwards.

In the cases in which it has been possible to assume the hereditariness of variola, that disease generally developed itself during intrauterine life. In like manner, syphilis most frequently gives rise to manifestations connected with the moment of conception or of birth. A certain number of children succumb in their mother's womb, solely because they are already affected with the disease. Deville and Bärensprung relate cases of this kind; it has also happened to me to see some.

At other times, the children come into the world with lesions unmistakably syphilitic. Rondelet, Doublet, and Gilbert give such cases; Guérard, Landmann, A. Cooper, Huguier, Cullerier, and many other observers, have seen children leave the womb with a syphilitic eruption.

In the great majority of cases, however, the child who inherits syphilis has at first the appearance of health, and some weeks afterwards presents signs which betray the evil transmitted to it from its

parents. Usually, as has been shown by Dr. H. Roger, it is from the first to the third month of extrauterine life that syphilis manifests itself in the new-born child. In fact, as Diday has pointed out, the evidence of authorities and that of facts are agreed upon this point.

Nisbett, Doublet, Mahon, Babington, Gilbert, Trousseau and Lasègue, Huguier, Bouchut, Bardinnet, and Desmarres * assert that syphilitic symptoms most commonly supervene, under these circumstances, in from a few days to two or three months; the last limit, but one altogether exceptional, is seven months according to Trousseau and Lasègue, and a year according to Cullerier.

Facts speak no less distinctly. Adding, says Dr. Roger,† to my own fourteen observations, in which the date of the first symptoms was noted, 158 cases by Diday, twenty-eight by de Méric in which that date was also given, and forty-nine by Mayr, in which the period of the outbreak was indicated, I obtained a total of 249 cases. Amongst these, syphilis showed itself 118 times in the first month, 217 times before the end of the third month, and this limit of the third month was only exceeded in thirty-two patients; that is to say, that in almost half the cases, the syphilitic affection transmitted by the parents had appeared before the expiration of the first month, and in seven-eighths of the cases, before the end of the third month; while in only one-eighth of the cases did it appear after the first three months; whence the inference that, if the physician has no information of the source from which the syphilis was derived, or if he doubts the authenticity of his information, he will be able, by having recourse to a calculation of probabilities, to decide whether infantile syphilis is hereditary or acquired, according as it shall have manifested itself before or after the third month of life.

Such is the general rule; but it would, no doubt, be an error to suppose that hereditary syphilis never appears after that space of time.

Side by side with the cases of which we have just been speaking, there is a certain number of others in which hereditary syphilis, after having remained latent for a certain number of years, has ended by showing itself, like the constitutional diseases the hereditary manifestations of which are most frequently tardy. As regards the

* *Traité des maladies des yeux*, t. i. p. 626.

† *Union méd.*, Jan. 31st, 1865, p. 203.

changes which acquired syphilis undergoes in the course of its evolution, it might be asked whether individuals, the subjects of tardy hereditary syphilis, are not descendants of parents long infected and already arrived at the tertiary period at the moment of conception. The facts, hitherto incomplete, do not, unfortunately, enable us to judge how much of truth there may be in such a hypothesis ; but since the local determinations generally differ accordingly as the hereditary syphilis manifests itself in the earlier periods of pregnancy or later on, it follows that we must study in two separate chapters the precocious and the tardy manifestations.

CHAPTER I.

PRECOCIOUS OR CONGENITAL HEREDITARY SYPHILIS.

UNDER this denomination we place the syphilitic symptoms which develop themselves in the fœtus and those which appear soon after birth. These symptoms, like those of acquired syphilis, require to be studied in each organic apparatus.

§ 1. *Lesions of the external tegument.*

The cutaneous lesions of hereditary syphilis do not differ strikingly, as regards their form at least, from those which belong to acquired syphilis. Erythema, papules, pustules, vesicles, such are the elementary anatomical modifications observed. Tubercles are rare, but, on the other hand, bullæ are frequent. The eruption produced by this latter lesion is known under the name of Pemphigus.

Roseola is a symptom which has been met with in a few cases only. Bassereau* saw break out, on the third day after birth, a papular syphilitic erythema which soon became complicated with coryza. Spread over almost the whole body, the eruption had commenced on the forehead and cheeks, by patches of a dull red colour, which afterwards assumed the coppery tint and became slightly prominent. In a new-born child under his care, Cullerier also observed the existence of roseola. Guérard, quoted by E. Vidal, Landmann,† and A. Cooper,‡ have published the histories of children who presented at the moment of birth an eruption of yellow or copper-coloured spots. H. Roger relates several cases of the same affection, easily recognisable, according to his account, by their characteristic, coppery tint. This eruption, as described by Diday, consists of

* *Traité des affec. de la peau sympt. de la syphilis*, 1852, p. 541.

† *Ann. méd. de la Flandre occidentale*, p. 410, March, 1852.

‡ *The Lancet*, t. iv., 1825.

patches of a bright red colour, irregularly rounded, of variable size (most frequently that of the nail). These patches have their favourite seat on the abdomen, the lower part of the chest, the neck, and the inner surface of the limbs; they are rarely isolated and are most frequently accompanied by ulcers of the mouth and anus.

Papular, vesicular, and superficial pustular syphilides are, like roseola, symptoms comparatively little frequent in the course of the syphilis we are now studying; there are as yet, so far as we know, few cases to establish, in a very exact manner, the characters of these lesions in hereditary syphilis. A distinguished observer, Dr. Roger, has given the case of a child three months old, suffering from papular syphilis, roseola, and ecthyma; but there was not in this child any other manifestation, and the state of health of the parents was not mentioned. I have myself seen a case of papular syphilide in a new-born child. Nevertheless, one circumstance which should be remarked here is the rarity of exanthematic eruptions, with the exception of mucous patches.

Mucous patches are, of all the cutaneous symptoms, that most frequently observed in the new-born child. The reason of this fact appears to be in the structure of the skin at that period of life; but to this anatomical peculiarity may perhaps be added the want of a proper attention to cleanliness observed in the case of so many children. However the case may be, mucous patches usually show themselves in the very first days after birth, but more rarely during intra-uterine life; their favourite seat is the skin in the vicinity of the natural openings, and especially about the lips or mouth, the nostrils, the external angle of the palpebral commissures, the circumference of the arms, and the genital organs in both sexes. They appear sometimes and most frequently in the form of small, granular, red points, which soon become converted into moist, prominent, whitish, foetid patches, surrounded by a mottled areola, sometimes in the form of cracks or fissures of greater or less depth and moist, the floor of which soon assumes a whitish tint. But whichever of these two modes predominates, mucous patches take on, especially around the natural orifices, a peculiar arrangement which has caused the circumference of the anus to be compared to a kind of serrated crown (Trousseau), and which, when fissures of the lips predominate, gives to the buccal orifice the appearance of a purse drawn together by its string. As in the adult, they consist of the papillæ tumefied, injected, and infiltrated with serum, nuclei, and cells of new forma-

tion, and of the sebaceous glands, the activity of whose secretion is increased.

It is evidently unnecessary to return here to the diagnosis of mucous patches. The intertrigo and impetigo of young children are almost the only affections capable of simulating them. It suffices to know that attention to cleanliness and a few emollient poultices rapidly remove intertrigo. As regards the yellow, thickened, confluent, ill-circumscribed crusts of common impetigo, besides differing from the whitish and moist surface of mucous patches, they leave behind them the dermis simply inflamed and not ulcerated. With mucous patches coexist, moreover, patches of a deep red colour which may also aid in the diagnosis.

The deep-seated pustular affections are impetigo and ecthyma. These manifestations belong, the latter especially, to a more advanced period of the disease than that of the symptoms of which we have just been speaking.

Syphilitic impetigo is generally situated on the face; but the chest, the neck, the ears, and the groins, are parts which do not always escape this manifestation. This lesion is characterised by the appearance of numerous confluent pustules, which soon burst and form, by the rapid evaporation of the liquid portion of the pus, thick, yellow, prominent crusts. The skin covered by these crusts, which are generally surrounded by a copper-coloured areola, is most frequently studded by greyish ulcers of little depth. These ulcers, and the copper-coloured areola just mentioned, are signs by the aid of which it is possible to distinguish the eruption in question from simple impetigo, which, moreover, generally occupies the hairy scalp.

Syphilitic ecthyma is, in the new-born child as in the adult, a serious and troublesome symptom. It shows itself upon the limbs, and chiefly upon the legs and buttocks, in the form of mottled patches which afterwards become converted into bleeding pustules; these pustules soon become covered with a thick, blackish crust, surrounded by a mottled areola, and concealing a deep ulcer with perpendicular edges, capable of committing, in a few days, considerable ravages. Although it may sometimes supervene simply as a consequence of privations, this affection, nevertheless, almost always acknowledges a syphilitic origin. The diagnosis of it is difficult, according to Professor Roger, and it is only by the concomitant specific symptoms that it is possible to judge of the true nature of this eruption.

Pemphigus.—The word pemphigus serves to characterise a cutaneous lesion consisting of bullæ of a size varying from that of a pea to that of a nut or a walnut.

This lesion, which is very analogous to that produced upon the surface of the skin by the application of cantharides, is sometimes met with in the adult; but it is also observed frequently in children, either at the moment of birth or some days after. While, in the adult, it is almost always independent of syphilis, in the child, on the contrary, it most frequently coexists with changes the syphilitic origin of which is indisputable, and on that account it has long been believed that a causal relation existed between the pemphigus of new-born children and the venereal disease.

There is not in the works of the older syphilographers any passage which appears to refer directly to pemphigus, unless it be, perhaps, the passage already quoted from Rondelet. Doublet makes mention of isolated, large, prominent pustules, appearing upon the hands and feet, and especially upon the fingers of children born of syphilitic parents. In 1791, Wichmann * not only described this affection with precision, but was one of the first to attribute it to syphilitic contamination. Shortly afterwards, in 1794, Osiander,† in a special treatise, refused to admit this cause. Bertin scarcely mentions pemphigus, and the description given of it by Stan. Gilibert ‡ appears to refer, in general, to the simple form of the affection. Dugès § insists upon the syphilitic origin of pemphigus, but without bringing forward any conclusive facts in support of his opinion. Lobstein,|| Jörg,¶ and Krauss,** relate several cases of pemphigus, but reject the syphilitic origin of that affection. But, in 1837, Depaul †† introduced into a new phase the question at issue, by the connection which he established between the pemphigus of new-born children and certain coexisting pulmonary lesions. Valleix ‡‡ also studied the

* *Beiträge zur Kenntniss des Pemphigus*. Erfurt, 1791.

† *Denkwürdigkeiten für die Heilkunde und für die Geburtshülfe*, 1794, t. i. p. 383.

‡ *Monographie du pemphigus*. Paris, 1713.

§ *Recherches sur les maladies les plus importantes et les moins communes des enfans nouveau-nés*. Thèse de Paris, 1821.

|| *Journal complément. des sciences méd.*, t. vi. p. 3, 1820.

¶ *Handbuch der Kinderkrankheiten*, 1826.

** *De pemphigo neo-natorum*. Bonn, 1834.

†† *Bulletins de la Société anat.*, 1837.

‡‡ *Clinique des maladies des enfans nouveau-nés*. Paris, 1838.

pemphigus of new-born children, but does not appear to have observed the form of which we are speaking. Cruveilhier* observed several cases in which there was at the same time pemphigus and lobular pneumonia. In 1847, Stolz, of Strasbourg, asserted that the pemphigus of new-born children is most frequently syphilitic, and based his opinion on twenty cases observed by him, and in which he succeeded in finding venereal symptoms in the parents. Hertle defends this view in his inaugural thesis.

In 1851, there arose on this subject, at the Academy of Medicine, a discussion which remained celebrated. Cazeaux maintained, against Paul Dubois, that the plantar and palmar syphilis of new-born children is not syphilitic; but the arguments which he made use of in denying all causal connection between pemphigus and syphilis could not stand against those employed by Professor Dubois, viz., the usual existence of syphilis in the parents of children suffering from pemphigus, the frequent coexistence of that affection with the lesions characteristic of syphilis, and lastly, the possibility of a cure by a mercurial treatment.

Since that time, Desruelles,† Fèvre,‡ Bamberger,§ Olivier and Ranvier,|| and H. Roger¶ have brought fresh cases in support of the doctrine that pemphigus of the extremities is a manifestation of hereditary syphilis. Accepted by Cazenave, Danyau, de Devergie, and Huguier, this doctrine, which is advocated by Lebert, Bouchut, Maisonneuve and Montanier, and E. Vidal, is that which we ourselves have adopted. Men of great merit, however, still hesitate to pronounce themselves on this point, or do not partake of the view

* *Anatom. patholog. du corps humain*, 15^e livraison.

† Thèse de Paris, 1852.

‡ *Du pemphigus des nouveau-nés*. Thèse de Paris, 1855.

§ *Beiträge zur Lehre vom Pemphigus* (Würzburg. medicin. Zeitschr., tom. i. part 1, 1860).

|| *Du pemphigus des nouveau-nés, dans Mémoire de l'Académie de Médecine*, 1863-4, t. xxvi. pp. 554-607.

¶ *Union méd.*, 1865. Compare: *Bulletins de la Société anatomique*, 1837, 1841, 1842, 1851, 1852, 1853, 1854. P. Dubois, *Gaz. médicale*, 1850. Cazenave, *Dict.* in 30 vols. Hervieux, *Union médicale*, 1852. Charrier, *Gaz. des hôpitaux*, 1854. Vauverts, dern. édit., *ibid.*, 1861. Bouchut, *Traité des maladies des enfans nouveau-nés*. Paris, dern. édit., 1862. Putegnat, *loc. cit.* Paris, 1864. See also, for further bibliographical details, the report of Messrs. Olivier and Ranvier.

which appears to us to be the most correct one ; some, like Ricord and Gubler, regarding the pemphigus of new-born children as a sign, sometimes of hereditary syphilis, sometimes of cachexia ; others, with Trousseau and Lasègue, Gibert, Diday, and Bazin, recognising in this lesion only the symptomatic expression of cachexia in general.

Active congestion producing a dark red circle, and sometimes a genuine papular protuberance, such is the initial modification of that portion of the dermis which is about to become the seat of the eruption in question. The bullæ soon appear and are confluent rather than discrete, and the skin upon which they rest presents a bluish or violet tint which contrasts with the pink colour of the other parts. Opaline, whitish, or yellowish, according to the quality of the product of secretion, they vary in size and may be one centimeter or more in diameter. They contain an albumino-fibrous fluid, in which float globules of pus and epidermic cells. The dermis in their vicinity is more or less seriously diseased ; sometimes its most superficial parts alone are affected.

After a short interval of time, the epidermic pellicle which surrounds the bulla breaks and the contents escape ; there then remains a slight ulceration, followed by a cicatrix, or the contents dry up and form yellowish or blackish crusts, which persist for a longer or shorter time. It is under such circumstances that the edges of the wound, sometimes raised and rounded, give to pemphigus some of the appearances of ecthyma.

Pemphigus may precede birth for a length of time sufficient, in some cases, to enable us to see at once that the child was born with vesicles already burst and empty, side by side with others which are beginning to appear and with others which have reached the full term of their evolution. But at other times this eruption does not develop itself until a certain number of days (eight to fifteen in general) after birth, and is observed in children who, until then, had appeared to enjoy perfect health:

The seat of these lesions deserves to be described exactly. The soles of the feet and the palms of the hands are favourite seats of pemphigus ; it rarely spreads to the dorsal surface of these same parts, and still more rarely invades other parts of the body. At all events, the plantar and palmar regions are the parts first affected, and this seat forms, to a certain extent, the characteristic sign of the disease. Pemphigus, like most of the syphilitic eruptions, proceeds by suc-

cessive bursts, which tends to increase its duration ; but each bulla requires a few days only, at most, to complete its evolution.

Death, the habitual termination of this kind of pemphigus, generally results from visceral lesions and from the extreme cachexia of which they are the cause. Profuse diarrhœa, vomiting, the thrush, and a state of progressive debility, are the precursory symptoms of this mode of termination.

The diagnosis of pemphigus, as an elementary lesion, is generally easy. The difficulty is, to know how to ascertain the origin of this manifestation and to discover the link which may connect it with a given diathetic condition. For this purpose, it is important to take into account the seat of the affection and the epoch of its appearance. Thus, the pemphigus which develops itself at the time of birth, or some days after, and which is limited to the palms of the hands or soles of the feet, is almost certainly syphilitic ; the other varieties of pemphigus in new-born children occupy indiscriminately the various parts of the body, and some of them have occasionally appeared to assume an epidemic character. A knowledge of the paternal and maternal antecedents may also facilitate the diagnosis. Ecthyma, which it is sometimes possible to confound with pemphigus, commences by small indurated papules which suppurate and produce deep or even phagedænic ulcers.

The prognosis, which is always unfavourable, is the more so in proportion as the cachexia is more marked.

Such is the pemphigus of new-born children. As regards the pemphigus of adults, most authors refuse it a specific origin, and in fact this eruption is extremely rare in the course of the evolution of syphilis. Bassereau, however, has seen two cases of it under these circumstances, and has been led to put it down as a symptom of acquired syphilis. In one of the two cases related by that excellent observer, the pemphigus, which supervened ten months after the appearance of the chancre, coexisted with mucous patches. It appeared in the palms of the hands and ceased without leaving any traces behind it.

Syphilitic tubercle is another manifestation of hereditary syphilis, but comparatively little common. Bertin gives a very vague description of this lesion. Bassereau relates that three children born of syphilitic parents were attacked, only a few days after birth, by large sub-cutaneous tubercles or tumours, which soon became softened and ulcerated.

Putegnat asserts that new-born children who inherit syphilis sometimes present a cutaneous affection characterised by rounded, mammillated tubercles, which after a certain time soften and ulcerate. The ulcers gain in extent and depth, destroying the skin and subjacent tissue; they become covered with a thick, blackish, and adherent crust, which, every time it falls off, discovers a loss of substance more and more extensive and deep. On that account, the author gave to this affection the name of syphilitic lupus of new-born children. On the body of a child just born, Virchow * saw disseminated tubercles from each of which proceeded a lymphatic cord of comparatively large size, and on the left arm all these cords ended in a gland. Rinecker † has made tubercles of the skin and sub-cutaneous cellular tissue in young children the subject of a minute description. Those of the sub-cutaneous cellular tissue do not appear to have escaped the attention of Doublet and Mahon; there is, in fact, reason to assume the existence of these tubercles in the cases of suppurating tumours mentioned by those observers.

Oxyris, of which we have already spoken in connection with acquired syphilis, sometimes belongs also to hereditary syphilis. Doublet, speaking of the isolated pustules on the fingers, adds:—"Sometimes they are placed in such a manner as to cause the nails to fall off. One child lost the nails of one hand and three of one foot." Albers saw a child which presented, soon after birth, a small pustule near the nail of the left thumb. Bertin twice saw the nails of the feet and hands fall off several times, in consequence of supuration of the matrix of the nail. Gerhardt ‡ gives a very analogous instance: in a syphilitic new-born child, the nails of the feet and hands, gradually becoming atrophied, and longer and narrower than natural, fell off to make place for sound nails, which soon underwent the same change, and this happened three times in succession.

Bouchut saw a little patient the nails of whose hands and feet were attacked by this affection. Here, as in acquired syphilis, the falling off of the nail is a phenomenon purely secondary, and always subordinate to the condition of the matrix of the nail modified by the eruptive affection.

* *Gesammelte Abhandl.*, p. 295.

† *Würzburg. Verhandl.*, vol. iii. p. 375.

‡ *Journal de Siebold*, t. x. § 553.

§ 2. *Lesions of the internal tegument.*

The most frequent effect of syphilis upon this tegument is the mucous patch; then come erythema and ulcers of greater or less depth. Rare upon the tongue and inner surface of the cheeks, mucous patches are more common about the isthmus of the throat, and upon the velum palati and tonsils. At these various points, where they do not present any notable difference, they are found with characters similar, so to speak, to those observed in the adult; the same opaline tint, the same mottled or reddish peripheric circle; they are equally susceptible of ulcerating and of leaving behind them slight cicatrices.

The erythema and the ulcerations do not differ much, as regards their anatomical characters, from the same affections observed in the adult. The Schneiderian membrane is the most special seat of these various lesions, from which the mucous membrane of the larynx and pharynx are not, however, always exempt.

Syphilitic coryza.—It is not always easy to recognise the elementary lesion which constitutes this affection; but there is reason to believe, on account of its frequent coincidence with the first manifestations of hereditary syphilis, that it is caused, either by a simple erythema, or by the presence of mucous patches. At all events, the orifice of the nose is generally cracked and radiated by fissures or small ulcerations which show themselves especially at the angles of the alæ nasi, and in a great measure obstructed by crusts through which oozes a more or less sanious liquid. The mucous membrane is red or whitish, and turgid; later on, it is sometimes ulcerated, and the cartilages may even be eroded. The bones lose their support and the nose becomes flattened; the upper part, already little prominent in young children, spreads out still more, which gives a strange appearance to the face.* These latter phenomena are, however, comparatively rare in congenital syphilis.

Pharyngitis and laryngitis, manifestations much more rare, have scarcely been observed. Laryngitis is doubtless the cause of that hoarseness of the cry and of the cough sometimes observed in newborn children. Mayr† has found redness of the mucous membrane of the larynx in the post-mortem examinations he has had the oppor-

* See Trousseau, *Clinique m d. de l'H tel-Dieu*, t. ii.

† *Ann. des malad. de la peau et de la syph.*, t. iv. p. 288.

tunity of making. Dr. H. Roger regards as doubtful the case of a child whose larynx presented after death ulceration of the mucous membrane with caries of one of the cartilages.*

§ 3. *Apparatus of locomotion.*

If we look to cases only, we are obliged to confess that lesions of the muscles are wanting in hereditary syphilis, as there is not, so far as we know at least, any observation which mentions them; but as little attention is paid generally, in post-mortem examinations, to the state of the muscular system, it is at least possible to admit, by analogy, that that system is not always exempt from change.

Although rare, lesions of the periosteum and the bones have several times been observed. Diday has succeeded in collecting six cases, which he found in special authors. But, in five of these cases, one by Doublet, another by Mahon, a third by Rosen, a fourth by Laborie,† and the other by Cruveilhier,‡ there is question of osseous lesions following after suppurating gummy tumours or ulcerations of the nasal fossæ or of the palatine arch. The change in the bone is direct, however, in a case of periostosis furnished by Bertin, and in another by Underwood,§ in which there is question of an exostosis of the cranium developed in a young child. Cullerier|| saw, in one case, congenital syphilis attack primarily the bones and the cellular tissue. Desmarres¶ mentions a child affected with a papular syphilide and a mucous discharge, in which two abscesses developed on the surface of the cranium did not heal until after the elimination of pretty large pieces of bone. Baerensprung** has given an illustration of a vast necrosis of the bones of the cranium; and very recently, A. Fournier communicated to the Medical Society of the Hospitals†† two cases of tumours, probably hyperostoses, developed upon the bones of the fore-arm. Bouchut mentions having seen not unfrequently a lesion which consisted in a premature

* *Union méd.*, p. 233.

† *Bullet. de l'Académie de méd.*, July 1st, 1851.

‡ *Treatise upon the diseases of children.*

§ *Anatom. patholog.*, 15 livraison.

|| *Bullet. de la Société de chirurgie.*

¶ *Traité pratique des maladies des yeux*, 2. édit., t. i. p. 626.

** *Die hereditäre Syphilis.* Berlin, 1864.

†† See *Union Médicale*, No. 34, p. 540, March, 1865.

hardening of the long bones. The tissue of the middle portion of those bones was solid, compact, and impossible to break or to divide with a cutting instrument. A lesion somewhat different, and to which may be given the name of separation of the epiphyses, also appears to belong to the domain of hereditary syphilis, on account of its usual coexistence with other syphilitic manifestations. It has for its special seat the epiphyseal cartilages. Valleix* was one of the first to notice its existence, without suspecting that it might have a syphilitic origin. More recently, Bargioni† and Ranvier‡ have each of them published a case of hereditary syphilis with a change in most of the epiphyseal cartilages. In Ranvier's case there was a consequent separation of the epiphyses. Baglioni further points out the existence, in the vicinity of the epiphyses, of gummy products which are met with again at other points of the osseous system. These same lesions have been observed by me in a young child which died in the Hôtel-Dieu.

§ 4. *Genito-urinary apparatus.* •

The lesions of the external genitals not differing from the eruptions described above, there is nothing further to be said about them here. The more deep-seated organs are very rarely affected. A case of hereditary syphilis with swelling of the testicle has been related by North; the same affection was seen by Bryant§ in a child six months old.

Lesions of the kidneys have not, so far as I am aware, been pointed out. My esteemed colleague, Dr. Tarnier, having had the kindness to give me for examination the viscera of a child born of syphilitic parents, I discovered, together with the change in the liver so well described by Gubler, the existence of a renal lesion characterised by a thickening of the web of the conjunctive substance, and a granulo-fatty change in the epithelial cells of the tubules. The kidneys, which were pretty firm, were remarkable for a yellowish tint

* Separation of several of the epiphyses of the long bones, with abscesses beneath the periosteum and remarkable long products in a newborn child. *Bull. de la Soc. anat.*, t. ix. p. 169.

† *La Sperimentale*, July, 1864.

‡ *Bull. de la Soc. de biologie*; and *Gaz. méd. de Paris*, p. 596, 1864.

§ *Medical Times and Gazette*, December, 1863, p. 614.

very similar to the spots which often, under the same circumstances, appear on the surface of the liver.

§ 5. *Apparatus of digestion.*

Alimentary canal.—Hereditary syphilis, like acquired syphilis, rarely affects the coats of the alimentary canal. Mucons patches or erythema of the bucco-pharyngeal tegumentary membrane are the chief lesions met with in this apparatus.

Förster* recently met with fibroid degeneration of Peyer's glands in a syphilitic child which died on the sixth day after birth and which, amongst other affections, had lobular pneumonia and purulent bronchitis. In the neighbourhood of Peyer's glands existed prominent masses, with a smooth surface, of a greyish pink colour, yellowish at the centre, and consisting chiefly of nuclei, cells, and fibres of conjunctive tissue, in place of the glandular elements. A case of intestinal syphilis very analogous to that of Förster has been published recently by Professor Eberth, of Zurich (*Archiv für Patholog. Anat. und Physiolog.*, t. 40, p. 326). The case was that of a new-born child which presented, at one and the same time, gummy nodosities in the thymus, lungs, and intestines.

Peritonæum.—A celebrated Edinburgh accoucheur, Simpson,† admits without hesitation the existence of hereditary syphilitic peritonitis. His experience is based upon thirty-one personal observations; but it must be acknowledged that these observations are far from being all perfectly conclusive. Some leave in doubt the question of hereditariness, others scarcely mention the condition of the organs in the abdomen and especially of the liver. Nevertheless, the fact pointed out by Simpson appears to be exact. In three cases of hereditary syphilis, Wilks found adhesions between the liver and the diaphragm, and in two, general peritonitis. Peritonitis is also met with, as we already know, in acquired syphilis, sometimes localised on the surface of an organ such as the liver, sometimes more extensive and general. Gubler has also seen in several cases of hepatic syphilis, traces of perihepatitis. Baerensprung‡ has seen under many circumstances, on the surface of the

* *Würzburg. medicinische Zeitschr.*, 1863, t. iv. Part I.

† *Edinburgh Med. and Surg. Journal*, No. 37; and *Obstetric Works*, Obs. V., VI., and VII., t. ii. p. 173.

‡ *Die Hereditäre Syphilis*. Berlin, 1864.

liver, the spleen, or even the intestines, soft and little consistent, or firm and resistant, as it were ligamentous, pseudo-membranous deposits. The characters of this affection are those of adhesive, chronic peritonitis, that is to say, of a lesion which does not manifest itself either by suppuration, by a rapid course, or by acute symptoms.

The *pancreas* is rarely diseased in the fœtus or in the new-born child affected with hereditary syphilis. Virchow* observed in one case fatty degeneration of that gland, and other authors have sometimes met with induration of the same organ. As regards the salivary glands, we possess no case showing a change in them.

§ 6. *Apparatus of hæmopoiesis.*

Liver.—The liver is one of the organs which most frequently undergo the attacks of hereditary syphilis, and this fact is not surprising, when we consider the important functions of this gland in the fœtus, and the facility with which it is susceptible of becoming changed in the syphilis of adults. Little or not at all known to ancient authors, the hepatic lesions connected with hereditary syphilis are of two orders, some diffused, the others circumscribed and very analogous to gummy lesions.

Gubler has the merit of having, for the first time, well described the diffused lesions, which are, in reality, the most frequent.

“The liver, more voluminous than in the normal state, is turgid, globular, elastic, hard, and difficult to make an impression upon with the finger, which ends by breaking it without leaving any impression upon its surface. Changed in its whole extent, or only at certain points, it presents a peculiar yellow colour, comparable to certain pieces of gun-flint, and in some cases it is studded with small opaque white grains having the appearance of grains of semola: on section, its homogeneous tissue shows vascular striæ and opaque grains irregularly disseminated, and yellowish patches more or less large and extensive.

“Injection shows that the vascular network is almost impermeable. On microscopical examination, there are seen in the substance of the gland a quantity often considerable, sometimes enormous, of fibro-plastic elements, in every degree of evolution, and in the midst of

* *Syphilis constitutionnelle*, trad. franç. de Picard. Paris, 1859.

which the cells of the enchyma are dispersed and, as it were, drowned.* This change may occupy only circumscribed parts, be limited to one of the lobes, or invade the whole extent of the organ. The bile is of a pale yellow colour and very thin; the blood, which is almost always changed, presents the consistence of currant-jelly."

Most frequently, symptoms the syphilitic origin of which is indisputable coexist with these lesions, which have been observed by Trousseau, Horteloup, Cullerier, Depaul, Lenoir, Lebert, Desruelles, Cazenave, and most of the physicians of France and other countries;† so that doubt can no longer be entertained of their connection with syphilis. The small whitish grains or nodules disseminated through the liver, to which Gubler has given the name of miliary syphiloma, differ from gummy tumours properly so called, by the single circumstance that they do not, like the latter, leave appreciable cicatrices behind them. It appears allowable to suppose that this difference is probably nothing else than the effect of a greater acuteness in the course of the disease, the termination of which is almost necessarily fatal. Cullerier‡ found in a child cured by protoiodide of mercury, the surface of the liver covered with a fibrous patch, a kind of cicatrix which appeared to him to have followed plastic infiltration.

Such is the first form of syphilitic change in the liver peculiar to the fœtus and new-born child; let us see in what consists the second form, which is much more rare than the preceding, and of which Testelin,§ Thiry,|| Wedl,¶ Zeissl,** and Schott,†† have seen examples.

In cases furnished by Testelin, the liver of a child seven months old, which was elastic, brownish-yellow, heavy and voluminous, con-

* *Mémoire sur une nouvelle affection du foie, &c., Soc. de biol.*, p. 25, t. iv. 1852.

† Compare: Hecker, *Verhandl. der Gesellschaft für Geburtsh.* Berlin, 1857, viii. p. 131. Bamberger, *Virchow's Handb. der Path.*, t. ii. p. 561. Thiry, *Gaz. hebdomad.*, p. 141, 1859. Howitz, *Hospit. Tidende*, 1862, Nos. 32-35; and *Zeitschr. für Kinderkrankh.*, 1863, p. 365. Testelin, Förster, E. Wagner, *loc. cit.*

‡ Quoted by Diday, p. 154.

§ *Journ. méd. de Bruxelles*, October, 1858.

|| *Presse méd. belge*, 1858, No. 22.

¶ *Grundzüge der patholog. Histologie*, p. 299. Wien, 1853.

** *Lehrbuch der constit. Syphilis*. Erlangen, 1864.

†† *Jahrbuch der Kinderheilkunde*, 1861, iv.

tained tumours varying in size from that of a nut to that of a walnut. The new-born child seen by Wedl was affected with pemphigus, and presented on the convex surface of the liver an oval tumour, the size of a bean, of a bright yellow colour at its centre, and more resistant than the surrounding hepatic tissue: the mother of this child was affected with secondary syphilis. In a child born under similar circumstances, and which succumbed a few days after birth, I found a firm, elastic, resistant tumour, of a whitish colour on section, situated about the middle of the liver.

The various lesions in question do not reveal themselves, usually, until late, *i.e.*, until they have arrived at an advanced period of their evolution. As has been observed by Portal, the children moan, and move their legs incessantly in sign of suffering; they are seized with vomiting and, when not constipated, have diarrhoea. The abdomen, which is tympanitic, is painful to the touch. The pulse, which is accelerated, gradually becomes weaker, the expression of the face changes more and more, the skin assumes a yellowish or earthy tint, and the emaciation is rapid and progressive: there is a general deterioration, a true marasmus. Palpation and percussion then reveal a more considerable enlargement and even hardness of the liver.

Icterus is sufficiently rare for Gubler not to have observed it in any case; ascites and œdema of the lower extremities have been observed in some cases only, so that it is rather in the general than in the local condition that we must here look for symptoms. The course of these lesions is slow and chronic; if cachexia supervene, death soon follows.

The diagnosis rests upon the observation of the above symptoms and upon a knowledge of the morbid antecedents of the parents of the little patient. The prognosis is the more unfavourable in proportion as the hepatic lesion is more extensive.

The *spleen*, which is frequently affected in the syphilitic new-born child, seldom presents the diffused or circumscribed deposits observed in the liver. Few authors speak of plastic infiltration of this organ; but, on the other hand, a greater number agree in admitting, like ourselves, that it is often more firm and voluminous (hypertrophy) than in the normal condition.

This hypertrophy of the spleen, of which we here point out the frequency, was, in 1867, the subject of an interesting communication by Dr. Samuel Gee to the Medico-Chirurgical Society of London. According to that observer, the spleen is augmented in size

in about one-fourth of the cases of hereditary syphilis, and sometimes it is accompanied by an analogous enlargement of the liver and of the lymphatic glands. If the child do not die, its spleen diminishes in size in proportion to the progress of the recovery. Thus the size of this organ may furnish an element of the prognosis of infantile syphilis.

The *lymphatic glands*, so frequently diseased in acquired syphilis, are not less liable to the attacks of hereditary syphilis. Hutchinson* saw in a child five months old, most of the bronchial glands infiltrated with that form of fibrinous deposits so often met with in connection with acquired syphilis. This child, born of syphilitic parents, was the subject of a cutaneous eruption; it had enjoyed good health during the first two months of its existence. The enlargement of size and modification of these same glands are mentioned in several of the numerous cases given by Baerensprung. This modification does not differ here from that observed in the other organs, and consists sometimes in a diffused infiltration of new elements, sometimes in small circumscribed tumours. The glands of the gastro-hepatic epiploon and of the mesentery are its most usual seat.

The *supra-renal capsules* are remarkable, in a great number of the cases of hereditary syphilis, for a very evident increase in size. Virchow has ascertained this increase in size in children affected with congenital syphilis, and observed, moreover, in one case, complete fatty degeneration of these glands. Baerensprung found, under the same circumstances, the cortical substance of the supra-renal capsules invaded by masses of nuclei and young cells of conjunctive tissue, a modification very analogous to the diffused lesion of the liver. Hyperæmic from the first, the supra-renal capsules have never presented later on the white miliary points so frequent in the liver.

The *thymus*, for the very reason of its functional activity during intrauterine life, appears already predisposed to undergo the influence of hereditary syphilis. It was unknown, however, what that influence might be, when, in 1850, Professor P. Dubois,† searching carefully for the cause of the deaths of syphilitic new-born children,

* *Medical Times and Gazette*, July 17th, 1858.

† *Gaz. méd. de Paris*, 1850, p. 392. See same journal, 1851.

found in a certain number a change in the thymus which presented itself in a form almost always identical, and which was characterised by the presence of pus disseminated or collected in cavities in the substance of the organ. Since that time, some observations have been added to those of the celebrated French accoucheur. Depaul has seen once in each of the lobes of the thymus a cavity filled with a yellowish and thick grumous matter. Weber* gives a case of abscess in this same gland. C. Hecker,† Desruelles, Braun, Spath, and Wedl‡ met with similar changes. But must it be admitted that purulent deposits existed in all these cases, and would it not be more plausible to assume the existence of softened gummy products, metamorphosed and mistaken for abscesses? It is impossible to decide this point absolutely, although we lean to the latter hypothesis, on account of the rarity of purulent formations in constitutional syphilis. A case by Lhemann,§ in which the thymus, the liver, and the dura mater were the seat of tumours formed of conjunctive tissue which had undergone fatty degeneration, would, to a certain point, be favourable to the idea that syphilitic lesions of the thymus do not suppurate any more than those of the other viscera. The description found in the cases furnished by Desruelles appears also to refer to a gummy tumour rather than to an abscess.

For the rest, the syphilitic manifestations of the thymus show themselves in the form of deposits or of circumscribed tumours; the diffused lesions which are said to have been found in it may be doubted, as many observers, at least, have not met with them. All the more reason, however, for looking for them in future, if they do exist.

Changes in the blood.—With these numerous glandular lesions it will readily be understood that the blood may become changed; this is, in fact, what happens, as it is easy to convince ourselves by the numerous effusions of blood met with after death in the various natural cavities or even in the substance of certain parenchymas.

* *Beiträge zur patholog. Anat. der Neugeborenen.* Kiel, 1852, vol. ii. p. 75.

† *Verhandl. der Berliner Gesellschaft für Geburtsh.*, vol. viii. pp. 117-122.

‡ Wedl once found in the centre of one of the lobes of the thymus a cavity filled with a mixture of pus and serum.

§ *Würzburg. med. Zeitschrift*, 1863, vol. iv. p. 7.

This change, although not as yet distinctly pointed out, is not, on that account, the less frequent. In Hutchinson's case it is stated that the pericardium was filled with coagulated blood. A great number of the cases given by Baerensprung make mention of effusions of blood into the cavity of the pericardium or even into the cavities of the pleuræ or the meninges.

Before becoming acquainted with these cases, I had myself already seen several examples of hereditary syphilis with visceral lesions and multiple effusions of blood. The following observation is not devoid of interest in this respect.

X., a female, æt. 25, was confined in the Hospital la Pitié (January, 1860) of a child at the full term, and which died six hours after. At the post-mortem examination, I discovered beneath the pericardium the presence of numerous spots of ecchymosis; these same spots were found less abundantly in the sub-cutaneous cellular tissue of the extremities, and on the surface of the lungs and pericardium, the cavity of which was partly full of a bloody fluid. The liver, which was enlarged, and firm and resistant beneath the fingers, was of a yellowish colour. The spleen was hard, firm, and large; the kidneys appeared normal.

The mother of this child informed me that her husband had suffered from syphilis; as for herself, she had never noticed anything of the kind.

§ 7. *Apparatus of the circulation.*

Förster, the only author, so far as we know, who makes mention of lesions of this apparatus, states that he met with syphilitic endocarditis in a child six weeks old; but the proofs which he gives of the nature of this affection are not convincing.* There is no case on record of arterial lesions supervening in hereditary syphilis, and if we sometimes see cases of venous thrombosis in children hereditarily infected, it must be acknowledged that this lesion is rather the effect of the cachexia than a modification primarily affecting the coats of the veins; these coats, which are generally tinged with the colouring matter of the blood, owe this phenomenon to the fluidity thereof, while the white globules are often increased in number.

* *Würzburg. med. Zeitschrift*, t. x. p. 29.

§ 8. *Apparatus of respiration.*

The respiratory organs, on the contrary, are frequently affected in young children who succumb to hereditary syphilis. The changes found in them generally occupy the lungs; they are of two kinds, diffused and in the form of lobular pneumonia, or circumscribed and in the form of tumours entirely analogous to the gummy tumours of adults.

Diffused lesions; pneumonia.—Devergie* was one of the first observers who spoke of these lesions, but does not occupy himself with the link between them and syphilis.

Two children, well-formed and at the full time, relates that author, died immediately after birth. The delivery was an easy one. The lungs were very large, compact, fleshy, more dense than natural, very heavy, discoloured, and pale; they sank in water, even when cut into small pieces. Their tissue was infiltrated with a colourless serous fluid, which it was difficult to press out of the cellular tissue containing it. On blowing into them, no air entered. This change did not consist either of schirrhous, or of the white induration which precedes the suppurating of tubercles; it was a kind of *lardaceous induration, occupying a middle position between the lardaceous-schirrhous condition and the softness* proper to the tissue of the lungs of new-born children.

Ch. Robin and Lorain† have studied with great care this peculiar condition, in a case which presented itself to their notice. C. Hecker,‡ Virchow,§ and F. Weber|| have given cases illustrative of this change which Howitz¶ describes under the name of syphilitic infiltration of the lung. Ranvier** has recently presented to the Biological Society the various organs of a new-born child whose lungs had undergone the same modification.

The lungs thus affected fill almost the entire cavity of the chest,

* *Annales d'hygiène*, April, 1831.

† *Gaz. méd.*, 1855, p. 186; and *Bull. de la Société de biologie*.

‡ *Verhandl. der Berliner Gesellsch. für Geburtsh.*, vol. viii. p. 126.

§ *Gesammte Abhandlungen*, p. 595.

|| *Beiträge zur pathol. Anat. der Neugeborenen.*, ii. p. 47.

¶ *Hospital Tidende*, 1862, Nos. 10 and 11; and Behrend's *Syphilidolog.*, 1862, t. iii. p. 601.

** *Gaz. méd. de Paris*, 1864. *Comptes rendus des sciences de la Société, de biologie*, 3^e série, t. iv. 1863, p. 51.

and often retain the impression of the ribs; their smooth and marbled surface presents an appearance differing little from that of lungs full of air, unless it be by being paler. These organs are firm, heavy, denser than water, contain air in some parts only, and cannot be inflated like the healthy lungs of a child. The air which penetrates them at some points becomes arrested, whence a partial emphysema from the rupture of some of the pulmonary vesicles. The changed portions of the parenchyma are resistant and admit of being cleanly cut; the surface of section is smooth, shining, of a scarcely pink white colour (flesh colour), sometimes marbled with white patches upon a reddish ground. Compact masses are seen, separated by the thickened interlobular septa, and having the consistence of the hepatic tissue. It is, in fact, a kind of white and very firm hepatisation. The fine ramifications of the bronchi and the blood-vessels are generally contracted in consequence of the compression. Wagner has found the bronchi filled with purulent mucus and a small quantity of air. On examination with the microscope, he has found the alveoli completely effaced or merely thickened, of an irregularly square or hexagonal shape, or divided by septa and elongated; the inter-alveolar conjunctive tissue was thickened, in most of the cases, by molecules rich in albumen and fat, amongst which were found nuclei and cells of new formation, atrophied and undergoing fatty degeneration.

This pulmonary infiltration, or syphilitic induration of the lungs, differs from grey hepatisation, an affection with which it is not devoid of some analogy, by the greater hardness of the diseased parenchyma, by its resistance to pressure, by its whitish or pink coloration, and by the nature of the concomitant manifestations.

The bronchial glands, simultaneously diseased, are increased in size, and present a reddish or yellowish-grey tint.

The *circumscribed pulmonary lesions* are pointed out by Portal in the following case which, in spite of the somewhat late appearance of the pulmonary lesion, appears, nevertheless, above all doubt.* "In the body of a child born of parents infected with the venereal poison, and which died at the age of three years, there were found externally true venereal pustules; the glands of the neck were swelled, those of the mesentery, the groins, and the axillæ were obstructed and full of a whitish humour, of the consistence of broth.

* *Observ. sur la phthisie pulmonaire*, t. i. p. 530, 1809.

The right lung was almost entirely destroyed by suppuration, there were some abscesses in the upper lobe of the left lung, and the remaining substance of both lower lobes was hard and resembled shrivelled leather. The pulmonary artery and the cavities of the right side of the heart were greatly dilated, and the muscular substance of the ventricles was singularly softened."

This case had passed unobserved, and in reality the lesions in question were not known until the researches of Professor Depaul * were published. That author pointed out, as early as 1837, the causal connection between them and syphilis, and, later on, communicated to the Academy two cases in which they are perfectly described. In one of these cases, a tumour the size of a small nut, prominent, of a yellowish tint, and softened at its centre, was the only product observed. In the other, the upper lobes of the lungs contained an irregular, rounded mass, of the size of a large nut. Other smaller masses were disseminated through the other lobes, six on the right side and five on the left, the smallest as large as a small nut; these various nuclei, when cut open, were seen to consist of a compact tissue of a greyish-yellow colour, and in the centre of each of them was found a cavity from which flowed a yellowish, sero-purulent fluid, variable in quantity, according to the volume of the induration. This same pulmonary lesion was also met with by Ch. Desruelles in a fœtus the subject of pemphigus and of the well-known change in the liver. C. Hecker † has also observed it, and Virchow ‡ appears to have seen one example of it.

On the other hand, Lebert has given a sketch of a gummy tumour found in the lung of a child affected with congenital syphilis. § The following case, which we saw in the Hôtel-Dieu, under the care of M. Vigla, does not differ from the cases described above.

A puny new-born child, the subject of pemphigus situated chiefly in the palms of the hands and soles of the feet, succumbed a few days after birth, at the Hôtel-Dieu, in 1863. The mother, who denied any kind of specific antecedent, refused to give any information concerning the health of the father.

* *Bulletin de la Soc. Anat.*, November, 1837; and *Mémoire sur une manifestation de la syphilis congénitale* (*Mém. de l'Acad. impér. de médecine*). Paris, 1853, t. xvii.

† *Verhandl. der Berliner Gesellsch. für Geburtsh.*, t. viii. p. 126.

‡ *Gesammt. Abhandl.*, p. 595.

§ *Anat. patholog.* Paris, 1857, pl. clii. figs. 3 and 4).

Post-mortem examination.—The brain, the liver, and the kidneys appeared intact, but in one of the lungs there existed about its centre a rounded tumour of the size of a small nut, of a yellowish white colour and pretty firm consistence at the circumference, but softer at the centre. This tumour was surrounded by a zone of fibrous tissue, and the parenchyma of the lung in its vicinity was perfectly healthy. Towards the base, and in the thickness of the lower lobe, was found another tumour, having the form of a bean, and the hilus of which appeared filled with a greyish and vascular tissue; the surface of this lobe presented a pisiform tumour, smaller, but also more firm and greyer than the preceding. The structure of these tumours was not altogether identical; fine fibres of conjunctive tissue, between which were interposed numerous elementary granulations, entered largely into their composition. These elements were abundant in the peripheric portions; but in proportion as the centre was approached, there existed only round or elliptical, very granular globules; then, in the central portion, there were found only fatty, molecular granulations.*

Lastly, let us quote the case given by Martineau of a pulmonary lesion in a child which died in three days, and of which Cornil has given very complete micrographical details. But the syphilitic origin of the change in the lungs here might seem doubtful, since the child showed no trace of pemphigus, and the mother had not contracted syphilis until about the fourth month of her pregnancy.†

To sum up, in the cases which we have just passed in review, the pathological product always showed itself in the form of tumours more or less numerous, of the size of a pea, a nut, or a walnut, and these tumours, perfectly circumscribed, firm or softened at their centre, and usually of a yellowish colour, do not differ from the gummy tumours which, under the influence of acquired syphilis, develop themselves in the organs. There are also met with again in them, at various stages of development or of change, the elements of conjunctive tissue peculiar to diffused infiltration, minus the epithelial cells. The zone of fibrous tissue which sometimes envelops them, their comparatively small number, and also their microscopical char-

* See *Gaz. hebdomad.*, 1864, p. 649.

† *Bull de la Soc. Anat.*, 1862, p. 486; and compare: Förster, *loc. cit.*, Kobner, *Klinische und experimentelle Mittheilung.*, &c., p. 117. Erlangen, 1864. Baerensprung, *Hered. Syphilis*, pp. 103, 108, pl. vii.

acters, are so many circumstances which enable us to distinguish them from true tubercle of the lung, a very rare affection at this period of life.

To these changes correspond peculiar functional derangements, differing little from those observed under similar circumstances in adults, but difficult to detect, as much on account of the weak condition as of the rapidity of the death of the children affected. Dulness and absence of vesicular murmur are the signs furnished by physical examination, when this is possible. The children are most frequently born before the full time, they are sickly, yellowish, cachectic, and little developed, and most of them are affected with pemphigus, which has for its special seat the palms of the hands and soles of the feet. With these affections sometimes coexist visceral lesions and especially changes in the liver; life is seriously compromised and death generally soon supervenes; it usually takes place in the first or second week after birth.

A precise diagnosis is difficult, but in the presence of pemphigus of the extremities and of a cachectic condition with dyspnoea, there is ground for suspecting the existence of a hereditary syphilitic affection of the apparatus of respiration.

§ 9. *Apparatus of innervation.*

Less frequently than the liver, the lungs, and the hæmopoietic glands, the nervous centres are affected with hereditary syphilis. Robin ascertained the existence of cerebral sclerosis in a child which died under the care of Legroux,* and which there was reason to believe was the subject of hereditary syphilis. The lesion of the spinal marrow met with in one of the two fetuses observed by Potain (see Vol. II. p. 84) does not differ from sclerosis, and thus hereditary syphilis may produce modifications of the nervous centres very analogous to the diffused lesions sometimes observed in adults; the circumscribed or gummy change of these centres is also met with. The meninges† and the brain‡ may equally be the seat of them.

Virchow has seen syphilitic new-born children present in the

* *Union médicale*, June 19th, 1858.

† See Howitz, *Behrend's Syphilidologie*, 1862, vol. iii. p. 604, and Vol. II. p. 41, of this work.

‡ Schott, *Mayr's Zeitschrift für Kinderheilkunde*, iv. 4.

cerebral substance small whitish, or yellowish deposits, formed of masses of fat granules.* In a child two years old, suffering from syphilitic paralysis of the oculo-motor nerve, de Graefe found several points of cerebral softening,† and, in the case of a child affected with an abscess of the arm, which was probably nothing else than a suppurating gummy tumour, Hutchinson and Jackson were of opinion that a plastic tumour existed, which compressed the cord and affected the roots of the nerves.‡

Hydrocephalus is another form of change which, according to some observers, is occasionally connected with hereditary syphilis. Haase§ relates the case of a woman who contracted a chancre in the course of the first month of her pregnancy, and whose husband had had chancres and syphilitic angina. This woman was delivered three times of a dead child at the eighth month. In her fourth pregnancy, she gave birth to a hydrocephalic child, which was paralysed on the left side, and presented purple spots disseminated over the skin. This child died at the end of six months. The fifth pregnancy furnished a child born at the full time, whose skin was livid and of a dark red colour. In her sixth pregnancy, she had a male child which was affected, in its second year, with scrofulosis and serpiginous crusts.

De Méric|| is equally inclined to admit an influence of syphilis upon the production of hydrocephalus; he has several times observed a great development of the head and a peculiar rotatory movement of the eyes in the children of syphilitics. We were ourselves formerly led to admit this pathogenesis which is corroborated by the imposing authority of Dr. Roger. A provincial friend of ours has told us that, surprised at seeing several hydrocephalic children born of the same mother, and wishing to know the cause of this phenomenon, he ascertained that her husband had formerly contracted syphilis in Paris.

The symptoms which accompany these various lesions are little known, or at least very difficult to study. Insomnia might, however, be such a symptom and perhaps the chief one. Bertin and, more

* *Syphilis constitut.*, p. 4.

† *Archiv für Ophthalmolog.*, i. p. 443.

‡ *Syphilitic affections of the nervous system*, in *Med. Times and Gazette*, t. ii. p. 84, 1861.

§ *Allgemein. med. Annal.*, p. 194, February, 1829, extr. dans *Archiv. méd.*, 1^{re} série, xxiii. 436, 1860.

|| *Lettsomian Lectures on Syphilis*, in *Lancet*, September 18th, 1858.

recently, Dr. Pitschaaft* have remarked that children the offspring of syphilitic fathers are often troubled with obstinate insomnia. René Vanoy† has corroborated this assertion. To this symptom are sometimes added general or partial convulsions, and more rarely paralysis with or without coma.

* Quoted by Bertherand, *Traité des malad. vénér.*, p. 327.

† *Journ. de méd. et de chirurg. pratiques*, 1849, p. 273.

CHAPTER II.

TARDY HEREDITARY SYPHILIS.

ONE of the most interesting pathological and clinical questions, that of tardy hereditary syphilis, is variously answered by physicians. Side by side with a certain number of authors who admit that hereditary syphilis may, like acquired syphilis, remain latent for years, there are others who think that this disease no longer shows itself after the first six months of life, that is to say, that it necessarily manifests itself in that interval.

As facts only can have weight in such a matter, let us see what they say.

N. Massa* quotes the case of three children in whom the venereal disease developed itself after from three to eleven years. "Tres hoc anno curavi ego pueros, unum ætate trium annorum, alterum ætate sex annorum, et erat puella, tertium undecim annorum; isti non sumpserunt lac infectum." These children did not take infected milk, says Massa; but what proof is there that they did not contract the disease otherwise than by suckling? None. There is then in these cases a desideratum which, let us admit, exists in several of the subsequent cases. Stoll† relates the remarkable case of two sisters aged, the one 10, the other 12, both affected with exostoses and catarrh, diseases both of which he suspected of having a venereal origin, and which yielded to a mercurial treatment. He also speaks of another young girl, who recovered equally well and under similar circumstances. Hoffman‡ gives the history of a young girl 9 years old, the subject of epileptic attacks, which did not occur with any regularity and were cured by specific treatment. J. Plenck§ saw the same symptoms in a child 6 years old.

* *Aphrodisiacus*, t. i. p. 42. † *Ratio medendi*, pars iii. pp. 232, 233.

‡ *Naturæ curiosorum ephemerid.*, centuria 1 et 2, Francofurti et Lipsiæ, 1717, Obs. CXXXVI. p. 272.

§ *Doctrina de morbis venereis*. Vienna, 1779, p. 131.

Bertin* speaks of a child born of an infected mother, which did not present any signs of syphilis until after having been weaned. This case may not appear extraordinary; but Balling† relates that he was consulted for a boy of 16, affected with a syphilitic-looking ulcer of the throat and caries of the bones of the nose. The father stated that about the time when he begat this child, he had himself symptoms of constitutional syphilis; the boy recovered under the employment of antisyphilitic remedies. Albers,‡ who saw similar cases, asserts that tardy syphilis prevails chiefly in children born of a syphilitic father and a scrofulous mother.

Rosen§ mentions having seen a girl of 11, fresh as a rose, in whom hereditary venereal disease caused swelling and suppuration of the glands of the neck, and of the nose, caries of the palate, and corroding ulcers of the face. But, on reading this case, one is led to see in it, by reason of the very nature of the lesions (suppuration of glands and caries of bone), scrofulous rather than syphilitic manifestations. Baumès|| quotes the case of a child which, under the influence of hereditary syphilis, was attacked at 4 years of age by all the symptoms of commencing syphilis. A nine months' treatment with general remedies having no reference to the venereal nature of the affection, did not at all improve the condition of the young patient, who was rapidly lapsing into marasmus. Information given in confidence by the father put Baumès upon the track. The use of the tisane of Vigarous and of fumigations with cinnabar was followed by rapid improvement; after being continued for three months, this treatment proved perfectly successful.

Cazenave quotes the cases of two girls, the one 9, the other 18 years of age, in whom it was impossible to discover any trace of a primary lesion, and who, nevertheless, had tubercular and serpiginous syphilides. The first was cured by the employment of proto-iodide of mercury.

Trousseau¶ saw a young woman who, from the age of 7, had

* *Traité des mal. vénér. chez les enfans nouveau-nés*, p. 153.

† *Ueber angeborene und erbliche Syphilis*, p. 129.

‡ *Ueber Erkenntniss und Kur der Syphilis*.

§ *Maladies des enfans*, p. 545. Paris, 1778.

|| *De la phthisie pulmonaire*, t. i. p. 428. Paris, 1805. See also, *Journ. Univ. des Sciences Méd.*, t. lv. p. 100.

¶ *Gazette des hôpitaux*, 1855, p. 497.

swelling of the legs, and for nine years suffered from insomnia and nocturnal osteocopic pains; at twenty, she had two exostoses on the arm and cicatrices in the pharynx. These symptoms disappeared under the influence of an antisyphilitic treatment. A. Fournier, quoted by Davasse,* speaks of two patients, the one aged 18, the other 25, who had never had a venereal lesion of any kind, and who both presented a gummy tumour of the velum palati; the first had also a tubercle in the pharynx.

Sperino† saw a young girl of 11 who had ulceration of the palate, and commencing cachexia. After unsuccessful attempts at syphilisation, iodide of potassium effected a cure. Melchior Robert‡ attributes to hereditary syphilis tertiary manifestations not preceded by primary or secondary symptoms, and which, supervening at an advanced age, yield to treatment with preparations of iodine; but this interpretation may appear hazardous. Professor Sigmund, of Vienna,§ relates four cases of tardy hereditary syphilis, manifested by lesions of the bones and cartilages, tubercles of the sub-cutaneous cellular tissue, and ulcers of the back part of the mouth. Zambacco|| saw, in a young man of 26, whose brothers and sisters were for the most part affected with hereditary syphilis, sudden losses of consciousness, derangements of vision, loss of memory, &c.

Ricord quotes the cases of two brothers aged, the one 40, the other 44, who both presented a lesion of the palatine vault of syphilitic appearance, but who had not had any other venereal symptom. He mentions having seen, under similar circumstances, a young man of 17, who was the subject of a naso-palatine osteitis, with destruction of the velum palati. This last lesion was also met with in a young girl of 14, placed, in 1862, under the care of Bouchut.¶ In a case of perforation of the palatine vault observed in a young woman of 19,** and recently communicated to the Medical Society of the hospitals, Dr. Hérard thought it necessary, in the presence of an absolute denial of syphilis on the part of the

* *La syphilis, ses formes, son unité.* Paris, 1865.

† *La syphilisation, &c.* Turin and Paris, 1865.

‡ *Nouveau traité des malad. vénér.* Paris, 1861, p. 701.

§ *Zeitschr. der Gesellschaft Wiener Aerzte*, 1858, No. 5.

|| *Affect. nerveuses syphilitiques*, p. 207. Paris, 1862.

¶ *Gaz. des hôpitaux*, July 10th, 1862, p. 317.

** *Bull. de la Soc. méd. des hôpitaux, et Union méd.*, 1861. A rather similar case is to be found in *Archiv de méd.*, t. i. p. 216, 1860.

parents, to hesitate concerning the nature of the disease ; but though in doubt, this skilful observer inclined rather towards a scrofulous origin. Certain forms of lupus have been regarded with reason as possibly connected with hereditary syphilis.*

One of our cases is a good instance of chronic pneumonia probably developed under the influence of hereditary syphilis. The liver, in this female patient of 42, presented on its surface deep cicatrices, lesions of great value for the diagnosis of visceral syphilis.† Other organs may certainly become changed under the same influence and the same circumstances, and this is a point worthy of investigation.

G. Lagneau lastly mentions epilepsy in children born of syphilitic parents. Idiocy, according to Critchett,‡ may be a symptom of hereditary syphilis. It appears easy to me to account for this connection by the modification sometimes caused by syphilis in the development of the bones of the cranium.

Such are, so far as we are aware, the principal facts known concerning tardy hereditary syphilis. Two objections may be made to the majority of them : the absence of precise information as to the health of the parents, and the want of certainty concerning the possible existence of acquired syphilis. Despite these gaps, which result in a great measure from the difficulty of observation in such a matter, are we called upon to reject the tardy manifestations of hereditary syphilis, or ought we, after the example of Diday and several other distinguished syphilographers, to admit their existence without reserve ? In my opinion, these manifestations do not admit of doubt, especially when we take into consideration, not only the cases mentioned above, but also a great number of others more recently collected by Hutchinson.§ These cases, which throw a new light upon the question we are examining, have the great advantage of taking into account the local lesion and the general condition ; they show that most of the individuals affected with tardy hereditary

* Veiel, *Speciell. Bericht über die Resultate der Heilanstalt für Flechtenkranke in der Jahren, 1855-61*. Schmidt's *Jahrbuch*, t. cxvii. p. 299.

† I must not omit to mention the arrest of development in the genital organs of this patient ; it appears to me dependent upon the syphilitic influence, and thus syphilis may be, in some cases, a cause of malformation.

‡ *Med. Times and Gaz.*, June 9th, 1860.

§ *Ophthalmic Hospital Reports*, t. xi. No. 8, pp. 54-105.

syphilis have a special stamp, and that other lesions than those of which we have just been speaking belong to the tardy development of the inherited disease. Thus the organs of the senses are affected, and sometimes, with the disease in the eyes or ears has been seen to coincide destruction of the nose, or of the velum palati.*

HEREDITARY SYPHILITIC OPHTHALMIA.

Maunsell and Evanson,† Walker, Dixon, and Lawrence, began the study of these affections; but it is chiefly from Hutchinson that we borrow the greater part of the following data.

Iritis.—Iritis is one of the first hereditary manifestations of ocular syphilis. In twenty-three cases collected by Hutchinson, the mean age of the children, at the commencement of the affection, was five months and a half; the oldest was sixteen months, the youngest six weeks old (Obs. XXI., XXII.); amongst this number there were five male and sixteen female children; in two, the sex was not given. In eleven cases only were both eyes affected. The young patients suffering from this affection were mostly feeble and cachectic, but sometimes also in a pretty good state of health. They presented, in most of the cases, symptoms of hereditary syphilis, and, so far as it was possible to ascertain, had been conceived soon after the appearance of the primary lesion in the parents. Infantile syphilitic iritis is rarely complicated, and does not present, in general, the symptoms of the iritis connected with acquired syphilis; the neoplasm, however, which is usually abundant, renders the danger of occlusion of the pupil very great.

Mercurial treatment, although it does not suffice to prevent the appearance of this lesion, is none the less the best means for combating its effects, and the most favourable for the complete absorption of the neoplasm.

Interstitial keratitis.—According to Hutchinson, this affection, which is frequently connected with hereditary syphilis, rare in early infancy, still more rare in adult age, generally shows itself between the eighth and fifteenth years, most frequently about the age of 10. It commences by a diffused haziness of the centre of the cornea of one eye. At this time no ulceration exists, and the traces of con-

* See Obs. XXXVIII., XXXIX., XLII., &c., *loc. cit.*

† *On the diseases of children.* Dublin, 1838.

gestion in the coats of the eye are extremely slight. The patient, nevertheless, almost always complains of a slight irritation in the eye, and of dimness of sight; a careful examination shows that the opaque patches occupy the thickness of the cornea itself and not either of its surfaces; these patches are separated from each other, and resemble so many microscopic masses of fog. In the course of a few weeks, sometimes more rapidly, the cornea, with the exception of a strip near its margin, becomes opaque from the extension and confluence of these interstitial opacities. The opacity is, nevertheless, greater at certain points, which form, to a certain extent, the centres of the disease. At this period, the comparison to ground glass is very correct; there almost always exists a zone of sclerotic injection, some photophobia, and pain around the orbit.

In a month or two, the other cornea becomes affected and passes through the same phases, only a little more rapidly; then comes a time when the patient is so far blind as to retain only a simple perception of light. The eye first affected soon begins to clear and generally, in the course of a year or eighteen months, there is a marked improvement. In the slighter cases, or under the influence of an appropriate treatment, the duration of the disease may be much shorter and the re-establishment of transparency complete, but there often remain for years, or even for life, patches of haziness which interfere more or less with vision. In the more severe cases, the surface of the cornea is slightly granular, and has lost its polish; sometimes, in consequence of excessive vascularity, this membrane becomes pink or salmon-coloured, and the sight usually continues somewhat damaged.

The usual absence of ulcerations or of pustules on the surface of the cornea prevents us from confounding this affection with the keratitis which follows the exanthematic fevers and especially small-pox. Scrofulous keratitis, with which it was long confounded, is accompanied most frequently by an increase in volume of the glands, or by tubercles in the lungs. Individuals affected with syphilitic keratitis have a dirty earthy colour of the skin, and the bridge of the nose usually broad and depressed, the forehead wrinkled, the angles of the mouth occupied by fissures, or by radiating cicatrices, and the permanent teeth small and some of them, particularly the central upper incisors, notched. Most frequently preceded or accompanied by iritis, this affection is modified by specific treatment, when tonics are of no avail. The prognosis is favourable, but

recovery is slow and often incomplete; frictions with mercurial ointment behind the ears, upon the neck, and in the axillæ, are the most appropriate means for combating it.

Galligo has furnished cases confirmative of Hutchinson's researches. Three children affected with hereditary syphilis and with the keratitis in question were subjected to the employment of mercurial preparations internally; frictions of the same nature were also used conjointly with a collyrium of nitrate of silver. Two of them recovered completely; in the third, the albugo was divided into two patches in the vicinity of the pupil.* I have myself communicated to the Biological Society a rather similar case, which will be given further on.

Choroiditis.—A certain number of cases of hereditary syphilis have shown, either on examination with the ophthalmoscope, or to the naked eye, a modification of the choroid analogous to hereditary or even acquired iritis. This modification consisted in the existence, on the surface of that membrane, of whitish deposits in the form of patches slightly prominent and covered by vessels of the retina, or in cicatrices probably resulting from the absorption of these same deposits; the retina was congested and dimmed in consequence of inflammation of the membrane of the vitreous humour. In a symptomatic point of view, this affection presents several degrees: the first degree, characterised by dimness of sight, answers to the exudation period; the retina and vitreous humour are hazy and have lost their transparency, but after a certain time, the sight improves, and the patches become limited. This is the second degree. Absorption constitutes the third. In fourteen cases furnished by Hutchinson, choroiditis existed ten times, deposits in the retina twice, inflammatory opacities in the vitreous humour once, and opacities in the crystalline lens five times. The period of life at which heredito-syphilitic choroiditis and the changes connected with it are observed, is generally the same as that at which interstitial keratitis is seen to develop itself. In the cases given by Hutchinson, six times out of ten the patient was the eldest of the living children in the family. The difficulty of obtaining a clear and detailed history of the antecedents of the patients leads us to base our diagnosis of this affection upon the physiognomy and state of the teeth of the individual affected.

* *Imparziale*; and *Gaz. méd. de Lyon*, 1860, p. 113.

According to Hutchinson, cataract and inflammation of the vitreous humour would also appear, to a certain extent, to be connected with hereditary syphilis; they accompany choroiditis more frequently than keratitis, and develop themselves several years after birth. But they are not sufficiently known to enable us with certainty to assign to them a syphilitic origin.

Amaurosis.—In addition to the ocular lesions of which we have just been speaking, Hutchinson has observed, in several children affected with hereditary syphilis,* a change characterised by discolouration and atrophy of the optic discs (white atrophy); the sight was lost for a period of from six to eighteen months, and an involuntary and often very marked drowsiness in the children left little doubt as to the cranial origin of this affection. This amaurosis does not differ, therefore, from those which we have studied above.

Otopathies.—Individuals affected with hereditary syphilis are not always exempt from deafness, and hearing may be entirely or only partially lost in them.

The morbid lesions which produce these derangements are varied and more or less serious. In the cases observed by Hutchinson, the function was lost without the appearance of any external lesion. The deafness occupied symmetrically both ears, ran rapidly through its various degrees of evolution, and became more or less complete in the space of six months, despite the absence of pain or abundant otorrhoea. This affection, like keratitis, manifests itself about the age of puberty, during the course of the five years which precede or follow it; it is, like the hereditary affections of the eye, three times more frequent in the female sex.

The few cases hitherto observed lead to the belief that this variety of otopathy depends upon a lesion of the auditory nerve, or that it results from a change effected in the inaccessible portions of the ear. The symmetry of the change indicates the existence of a central cause, and the membrane of the tympanum, without being altogether normal, presents no modification in relation with the functional disturbance; the Eustachian tubes have always appeared free. Hutchinson, who sees in this affection the analogue of syphilitic retinitis and white atrophy of the optic nerves, suspects a modification of the auditory nerve or of its ramifications in the labyrinth. The total

* See Obs. II., IV., VI., *loc. cit.*

loss of hearing, in spite of specific treatment, indicates a prognosis little favourable.

LESIONS OF THE LAYERS OF THE OVUM.

The study of these lesions will serve to complete the subject of hereditary syphilis. The important functions of the membranes which envelop the human ovum are well known, and there is reason to believe that from changes in them result certain cases of early abortion in syphilitic women, when the fœtus does not present any change. There exist, however, few precise observations on this point. Lebert* found, between the amnion and the placenta, yellow granulations having the structure of tubercle; but later on,† he did not venture to attach importance to this lesion. Simpson‡ attributes an accessory part only to syphilis in the production of the asphyxia of the fœtus connected with a change in the placenta. Mackensie§ ascertained the presence of a thick fibrino-fatty layer between the foetal membranes; but it is questionable whether syphilis was the cause of this deposit. The observations of Wilkinson King, given by Wilks,|| suggest the same doubt. All these facts, however, are not without value, as they indicate, at least, the frequency of placental lesions in syphilitic women. These lesions, according to Virchow,¶ affect either the maternal or foetal part of the placenta, and if it be doubtful whether the latter may be affected primarily, the same does not apply to the former. They present themselves under two forms, one diffused, the other circumscribed. The diffused form, characterised by thickening with fibrous induration of the placenta, generally ends in atrophy of the villousities.** The circumscribed form assumes a papular or condylomatous appearance, and the excrescences or polypous vegetations which constitute it

* *Comptes-rendus de la Société de biologie*, 1852, t. ii. p. 127.

† *Traité d'anatomie pathologique*, t. i. p. 242.

‡ *Obstetric Memoirs and contribut.* Edinb., 1856, vol. ii. p. 457.

§ *Association Medical Journal*, 1854, No. 97.

|| *Guy's Hospital Reports*, ser. iii. vol. ix. p. 60.

¶ *Die krankhaften Geschwülste*, t. ii. p. 478.

** Dr. Braun, quoted by Wedl (*Grundzüge de patholog. Histologie*, p. 505. Wien, 1853), relates a case of diffused infiltration of the conjunctive tissue of new formation, in the chorion of a woman affected with syphilis. The consequence of this lesion was atrophy of the chorion and abortion.

are a mucous tissue organised and rich in vessels (Endometritis decidua).

Such are the lesions of the placental membranes to which a syphilitic origin has hitherto been attributed; it was our duty to make them known, it belongs to the future to pronounce more positively concerning them.

CHAPTER III.

MODES OF EVOLUTION.—GENERAL PHYSIOGNOMY.

AFTER having analysed and described singly the lesions of hereditary syphilis, it becomes important to take a general view of this pathological form, and to follow its course and evolution. Developed during intrauterine life, the usual effect of syphilis is, to cause abortion towards the sixth or seventh month of pregnancy. Although doubted by some authors, as de Blegny, Acton, and Huguier, who accuse immorality and excesses, when they do not make mercury responsible for the evil, this fact is none the less exact, as is established by a great number of cases in which mercury put an end to multiple abortions. According to Potton, abortion occurs in about one-tenth of the cases of hereditary syphilis. Whitehead counted, in two hundred and fifty-six women affected with syphilis, one hundred and seventeen abortions; in twenty-six cases examined by Förster, three of the children were still-born. Sometimes connected with a change in the membranes of the ovum, this death is more frequently the consequence of foetal lesions. The foetus, usually in a state of maceration more or less advanced, presents, if not always, at least in a certain number of cases, appreciable material lesions, such as indurated papules of the skin, pemphigus, diffused or circumscribed visceral lesions, or sero-sanguineous effusions into the serous cavities. After birth, hereditary syphilis assumes most of the forms of acquired syphilis, with the exception of the primary lesion. The manifestations called secondary appear first, then come the tertiary lesions; but this rule undergoes numerous exceptions. The order of succession which prevails in the development of acquired syphilis is far from being equally constant in hereditary syphilis. Whether or not the secondary period has had its evolution during the course of intrauterine life, only tertiary manifestations are sometimes observed; at other times, and more frequently perhaps, secondary and tertiary manifestations coexist; erythema, papules, or pustules are seen side by side with visceral lesions differing little

from those in the adult. This fact is not surprising, for it has its reason, apparently, in the age of the patients; it is sometimes observed in children affected with acquired syphilis (Roger).

At the moment of birth, and for some days after, the child appears to enjoy perfect health. Symptoms soon appear which reveal the disease with which it is affected: at first, it is difficulty of breathing through the nose, a kind of obstruction which is pretty certain to be attributed to cold. Cracks and fissures show themselves in the vicinity of the natural orifices, and then appear upon the surface of the skin some of the eruptions described above. But, as Rosen has already pointed out, these symptoms are not all met with in the same subject, one presents more, another less. During this time, the general health declines, the child suffers and becomes emaciated, it has insomnia, its cry changes, and when to this state of things are added visceral lesions, it soon falls into a state of cachexia and marasmus. The following is the sketch of this condition drawn by one of the most acute observers. "The face," says Professor Trousseau,* "is of a peculiar sooty tint; it would appear as if a thin layer of coffee-grounds, or of soot mixed with a large quantity of water, had been passed over the features; it is neither pallor, nor jaundice, nor the straw-yellow colour of other cachexias. This tint, much less deep, scarcely extends to the rest of the body. The eyelashes are not developed or have fallen off; the eyelids are often reversed, and at the external angle are sometimes fissures like those seen at the lips or openings of the nostrils. In place of eyebrows, which have fallen off, is seen a yellowish sooty patch, with a considerable production of scales, and these same sooty patches, which are in fact nothing else than psoriasis, are met with also especially upon the chin, around the mouth. . . ."

At the same time the child is puny, sickly, emaciated, and cachectic. If it was at first robust and well-organised, it becomes weak and sad, and is rather puffed than emaciated; its digestive functions are usually deranged, and it has vomiting, frequent and obstinate diarrhoea, and sometimes bloody stools; the debility is such that death may be the result of syncope, when it is not the effect of the marasmus. Erysipelas and pneumonia are frequent and always fatal complications. Recovery is not to be hoped for when syphilis develops itself at the very moment of birth, it is rare

* *Clinique médicale de l'Hôtel-Dieu*, p. 665. Paris, 1862.

when the disease supervenes during the first months of life, but is observed more frequently when it does not appear until after several years.

Such is hereditary syphilis in the first periods of life. Later on, this disease reveals itself by symptoms similar to the tertiary symptoms of acquired syphilis, for the disorders which show themselves in connection with the organ of vision, and which Hutchinson has so well studied, appear to us, contrarily to the opinion of that author, to belong rather to the group of tertiary than to that of secondary manifestations. Like the tertiary manifestations, these ocular lesions are characterised by plastic products (conjunctive hyperplasia) very analogous to those of the third period of acquired syphilis. When they do not occupy the eye, their usual seat is, sometimes the sub-cutaneous or sub-mucous cellular tissue, sometimes the osseous system, more frequently, perhaps, the velum palati and pharynx. Thence sub-cutaneous gummy tumours with their successive phases of evolution, perforations of the velum palati or of the palatine arch, exostoses, caries, necroses of the more superficial bones, and more rarely visceral lesions (Obs. XLIII.). Chronic arachnitis, with a tendency to hydrocephalus, is also met with, according to Hutchinson, in most of the children deeply infected.

These various affections do not, in general, give a very severe blow to the organism, and are rarely accompanied by cachexia if the principal viscera are intact. Nevertheless, the physiognomy of the patient is usually altogether characteristic. The skin presents a dirty, pale, or leaden tint, and is thickened, rough, and flaccid. More rarely, it presents the beautiful clear colour of scrofulous persons. Upon the face are seen cicatrices which occupy by preference the angles of the mouth, whence they radiate over the cheeks. The forehead is generally large and prominent in the region of the frontal eminences, and sometimes a large depression exists a little above the eyebrows; the hairs are few, dry, and split at their extremities. The bridge of the nose is broad, or even sunken. The permanent teeth present an aspect altogether peculiar. The upper central incisors are characteristic from their form as well as from their colour and dimensions. On coming through the gum, these teeth are generally short, narrow from one side to the other, and very thin at their lower edge; after a certain time, a portion of this edge, in the form of a crescent, breaks off and leaves a broad, deep, vertical notch, which continues for several years and disappears from twenty to thirty years

later in consequence of the premature wearing away of the teeth. These two incisors sometimes converge and sometimes are rather widely separated from each other. They are traversed by horizontal depressions which are by no means constant.

Sometimes intact and bright, the eyes present, at other times, traces of old or recent change, synechiæ with or without deformation of the iris, or chronic interstitial keratitis. The importance of this latter lesion is such that many authors incline to regard it as a pathognomic sign of syphilitic hereditariness, and as it usually coincides with the modification of the dental system, it follows that the combination of these two circumstances is not without much weight in the balance of the diagnosis. To these modifications is sometimes added a true arrest of development of the whole individual, or merely of one or more organs. These deviations of type, the usual consequences of material lesions supervening either in the course of intrauterine life, or later on during the first years of existence, are worthy of attention. The following cases, with which we shall close this part of our subject, are examples of this; they inform us, moreover, concerning the course of the tardy syphilitic lesions.

Tardy hereditary syphilis.—Idiotcy, epilepsy, smallness of head.

OBS. LIV.—The woman X., of healthy appearance, was treated by me for neuralgic attacks and alopecia. This woman, who believed that her husband had had syphilis, did not pretend that she herself had been quite free from any symptoms connected with that disease. She had had four children, of which one died at 7, another at 3, and a third at 2 years of age; she had had four miscarriages, three at seven months and a half, and the fourth at two months. The only child left was 12 years old and did not look more than 6 or 8 at the most. His head was extremely small, and already the bones of the cranium appeared firmly united. This child walked when led and was almost completely deprived of intelligence and memory. He did not speak, and it was with difficulty that he could be made to say *one, two*. He could not put out his tongue, although that organ enjoyed all its mobility. He was obstinate, had contracted habits of masturbation, and from 2 years of age had had epileptiform attacks. The organs of sight and hearing were intact, the nose rather large and flattened. The two first incisors were notched and studded with small depressions, the two other incisors and the canines scarcely protruded from their sockets. There was true arrest of dental development. On the upper part of the tibia, there was a fistulous opening and necrosis of several months' standing.

OBS. LV.—The woman D., æt. 25, entered the Hôtel-Dieu in March,

1863. This patient had lost her father from chest disease and her mother from cancer of the stomach. Healthy until her marriage at 16, she perceived, about a month afterwards, some pimples upon the genital organs, which were soon followed by roseola and angina, for which she took pills, Cuisinier's syrup, and sarsaparilla. She had a miscarriage at six months. A second pregnancy took place, and she was delivered at nine months of a child now living. This child, which was very thin when born, could not be suckled by its mother. It does not appear to have presented, during the first years of its life, any cutaneous eruption. Later on, it had measles and a hard tumour in the neck, which terminated in suppuration. At present 10 years old, he has for two years had kerato-conjunctivitis which very notably interferes with vision. The cornea is opaque at several points and also ulcerated. The eyelids, glued together at both angles, leave an opening which permits of seeing, at most, the field of the cornea. The incisor teeth are bicuspid, large and short, with transverse striæ. The general development is very incomplete, the head is very small, and the child is irascible.

Madame D. became pregnant a third time, and was delivered of a girl at seven months and a half. Now 9 years old and healthy, she has the nose flattened at its base and the teeth separated and bifid.

Since then there have been three fresh pregnancies, of which two were at the full time. The children died in two days. The third pregnancy terminated at six months. Syphilitic tubercles showed themselves in the mother during the course of the latter, in spite of a treatment ordered by M. Nonat.

VARIETIES OF SYPHILIS.

The preceding study had for its object to make known the numerous manifestations of syphilis without concerning ourselves about its most ordinary types. It becomes necessary to point out the varieties, now that we are acquainted with the species. Although always produced by the same agent, syphilis varies in its form and in its intensity. From this point of view, we may group under the three following heads the differences which it presents:—

- Common syphilis ;
- Benignant syphilis ;
- Malignant syphilis.

Amongst the numerous historians of syphilis, some have admitted more or less severe forms of this disease. Ruiz Diaz de Isla points out three; but what he means thereby relates much more to the periods of syphilis than to the degrees of its intensity. The same does not apply to Alex. Trajan Petronius,* who recognises a benignant syphilis and a malignant syphilis, a distinction which it is still possible to find in other authors, and which is worthy of being retained.

1. *Common syphilis*.—Common syphilis, which we had more particularly in view in our Nosography, is the variety most frequently observed. Passing through each of the stages which we have pointed out, it manifests itself by an entire series of symptoms the danger of which consists, above all, in the seat of the morbid localisation. It is very susceptible of cure, if care be taken to adopt a suitable treatment sufficiently early, so as to avoid a change in the functional elements proper to the organ diseased, which change, as we know, is always secondary.

2. *Benignant syphilis*.—This form, which has the closest resemblance to common syphilis, differs from it only by a less intensity, and especially by a shorter duration. It is not necessarily seen to pass through all the periods and always to accomplish a complete revolution; sometimes, more frequently perhaps than is generally believed, it reaches the term of its evolution at the end of the second-

* *Aphrodisiacus*, t. ii. p. 1225.

ary lesions. The organism, for a reason which is not always easy to detect, may from that moment regain its normal integrity. Comparable, to a certain point, to variola which stops short of the suppuration period, this variety of syphilis might justly receive the title of *syphiloid*; it is, in fact, the analogue of varioloid, that is to say, the slightest, the most benignant, and the shortest form of the disease. If it is not always easy to say upon what this variety depends, it cannot be denied that it is observed chiefly in certain countries remarkable for the mildness of their climates. This fact did not escape the earlier observers, for Jean de Léon already observed that syphilis became cured spontaneously in Lybia.* It will be found mentioned elsewhere (see Geographical Distribution), and consequently we shall not again revert to it.

3. *Malignant syphilis*.—Malignant syphilis claims our attention as much by its severity as by the differences which separate it from common syphilis. This form most frequently reveals itself to the observer from its very commencement: the chancre, instead of confining itself to the more superficial portions of the dermis, gradually burrows and becomes phagedænic. Rendered distinct by the interesting researches of Bassereau, this fact has been thus expressed:—“After indurated phagedænic chancres, supervene severe pustular syphilides, more tardy ulcerating affections of the skin, suppurating exostoses, necrosis, and caries.” The observations contained in the inaugural thesis of Dubuc do not in any way invalidate this view, since, of nine patients affected with severe and malignant syphilides, four had phagedænic chancres at the outset.

To the primary lesion succeeds a first burst of eruption, remarkable for this peculiarity, that it partakes at one and the same time of the characters of the exanthematic or precocious syphilides and of the deep-seated and tardy syphilides: of the first by its premonitory symptoms, its glandular adenopathies, and its generalisation; of the second, by the material lesion which constitutes it and by the cicatrices which follow it. Whatever may be the elementary lesion by which the eruption commences, pustule or tubercle, its constant tendency is to run on to ulceration; after a time which is generally very short, the pimples become covered with crusts which, increasing incessantly by a peculiar plastic secretion, stratified and arched at the centre, present very much the appearance of oyster-shells. Hence

* Quoted by Freind, *Hist. de la médecine*, p. 68, 3^e partie.

the denomination of *pustula ostracosa* given by the first syphilographers to these lesions more frequent in the sixteenth century than in our own times. Under these crusts exist ulcers with perpendicular edges and a greyish, pultaceous floor, surrounded by a pink zone. After a longer or shorter duration, the secretion dries up, the edges sink down, and the ulcers cicatrise, but sometimes they are seen to advance insidiously, and to erode by degrees the adjacent parts, or even to gain in depth, to lay bare the sub-cutaneous parts, or to cause adjoining cavities to communicate with each other.

The first eruptive burst does not always behave in this manner: the serpiginous or perforating course frequently does not reveal itself except at the second eruption; but, in general, this second eruption soon follows the first. The cicatrices which follow have the form of ulcers, they are deep and present a dark red tint which slowly becomes effaced from the centre towards the circumference. In some cases, instead of the peculiar evolution which we have just described, there appears on the summit of the eruptive pimple, a small black eschar, which gradually enlarges and ends by falling off, leaving bare an ulcer very analogous to the preceding. The eruptions which during this time show themselves upon the mucous membranes have less tendency to burrow and to destroy the tissues, and are, moreover, pretty discrete if not altogether wanting (Dubuc). The nasal fossæ must, however, be excepted, as the mucous membrane is frequently ulcerated and the septum sometimes perforated. With these eruptions, or soon after their disappearance, supervene other lesions, and chiefly ocular lesions, exostoses, and more rarely lesions of the testicles, or of the abdominal viscera, as was observed in a most interesting case furnished by Axenfeld.* These symptoms sometimes follow each other with such rapidity that the syphilitic testicle may, as was seen by Melchior Robert, coexist with the indurated chancre, and that there are observed, at the same time and in the same individual, the three series of primary, secondary, and tertiary lesions.

A general condition which may be serious serves as an escort to these various manifestations. The patients have constant fever with exacerbations in the evening; they become emaciated and pale, and lose their strength, they have a bad appetite, with inclination to vomit and diarrhœa. They are seized with dyspnœa and palpitation

* Axenfeld, *Bullet. de la Soc. anat.*, 1863, p. 512.

of the heart, have obstinate cephalalgia and insomnia, and are low-spirited and uneasy; sometimes even the idea of committing suicide occurs to them. Under these circumstances chiefly, appear the ordinary complications of syphilis. Erysipelas and pneumonia supervene to put an end to the sufferings of the patients; if not, the strength gradually returns while the crusts become detached and leave bare pink ulcers which soon cicatrise. More rarely, death is the consequence of the syphilitic lesions themselves, the patients succumbing to a kind of marasmus consequent upon the existence of multiple lesions of the viscera. When recovery takes place, new eruptive bursts sometimes supervene after intervals of time more or less remote; like the preceding ones, they manifest a tendency to ulceration or to gangrene, and finally to destruction of the tissues.

Such is the abridged sketch of a form of syphilis still existing, not without some analogy to the syphilis of the end of the fifteenth and commencement of the sixteenth century, but which, from the nature of the local lesions in which it consists, from the characters of the general symptoms which accompany it, and from the rapidity of the course proper to it, fully deserves the name of *malignant syphilis*. Under what influences is this form of disease seen to develop itself? Let us confess that there are a certain number of cases which appear unexplained by any rational cause. The cases related by Dubuc belong precisely to this class, and that observer, not believing that there was reason for invoking a peculiar quality of the virus, found himself under the necessity of referring the malignity of the syphilis to internal predisposition. Can it be said, however, that the circumstances which favour this peculiar condition always escape our notice? I think not. Early age, which renders syphilis more acute, sometimes imparts to it a certain degree of severity or even of malignity. The influence of race is not perhaps to be neglected in the question we are examining; but hitherto we are without the elements necessary for the appreciation of this point; in like manner, the opinion that the contamination of one race by another is capable of aggravating the disease is by no means proved.* It is easy to understand that unhealthy conditions may give to this disease a more active impulse. Insufficient nourishment, rapid changes of temperature, a moist climate, overcrowding, and want of acclimatisation, all

* See Gauthier, *Deux années de pratique médicale à Canton (Chine)*. Thèse de Paris, 1863.

circumstances which aggravate syphilis, may also, to a certain extent, favour the development of the malignant form. Is the quality of the poison itself really without influence? Some authors are inclined to believe that syphilis transmitted from the fœtus to the mother, like that which results from hereditary lesions, is generally more severe; but this opinion is still without positive proofs. We know, in another field of observation, that severe small-pox may produce benignant small-pox, and *vice versâ*. But, if external circumstances sometimes favour the appearance of malignant syphilis, seeing that in many cases it is not possible to attribute the least influence to them, we are naturally led, until we possess more ample information, to connect this variety of syphilis with a peculiar predisposition in the individual affected.

INFLUENCE OF SYPHILIS UPON OTHER DISEASES.

The preceding description applied to syphilis developing itself in a healthy organism. Our object now will be to examine this same disease in an individual already out of health, to search for the modifications which it is susceptible of undergoing under these circumstances, and for those which it may impress upon the diseases with which it coexists. Although little studied hitherto, the subject we are about to investigate is none the less important, inasmuch as it is met with at every step in practice.

If syphilis does not usually supervene in the course of an acute disease, on the other hand it frequently develops itself in individuals suffering from chronic disease. To state precisely the possible reaction of a given disease upon syphilis is not easy, considering how few elements exist for the purpose; but the important point to know is, that the course of the syphilis is interfered with only when the coexisting disease is in a state of activity. Side by side with the influence exerted by the disease, however, is another connected with the peculiar constitution of the individual affected, and it is no doubt to this latter influence that the remark of Spencer Wells refers when he says, in his *Practical Observations on Gout*, London, 1854, p. 57, that syphilis, which is very severe in persons affected with gout, readily assumes a scorbutic character.

There generally exists a reciprocal modification of the two diseases; the one becomes more acute, while the course of the other is retarded. A young man affected with Bright's degeneration of the kidney, and for several weeks under our observation, was the subject of a chancre of two months' standing, not yet cicatrised; the lesion of the kidneys, if the patient's account was to be believed, had advanced, in him, with a certain degree of rapidity, since, not having existed for more than a few months, it showed itself at the period in question by a very copious precipitate of albumen and by the passage of numerous fibrinous cylinders into the urine. Another patient, whose case we followed for eight months, presented at first, together with well-marked tuberculosis, syphilitic rupia and orchitis; but the pulmonary affection was soon seen to predominate, at the expense, in some measure, of the syphilitic lesions, which appeared to be arrested

in their course. It should be added, however, that for a fortnight this patient took fifteen grains of iodide of potassium daily.

A young woman who was at the same time phthisical and syphilitic, had, during nearly five months that she was under our observation, only lesions localised in the genital organs and very slow in their development.

The acute diseases which supervene in the course of syphilis may interfere with its evolution. "The appearance of an acute disease," says Bassereau, "such as severe fever, inflammation of the lungs, &c., supervening soon after the contagion, appears to me, in some cases, to have sufficed to retard the development of erythematous syphilides."*

When the syphilitic manifestations exist, the development of an acute disease has not, generally, much influence upon their course or termination. In an individual suffering from variola and arrived at the end of a papular syphilide, I did not observe any appreciable modification in the course of the syphilitic eruption.

We are compelled to admit, however, that under certain circumstances, syphilis is manifestly influenced by acute diseases. A young woman, treated at first by Bazin for a secondary syphilitic eruption and a diffused general paralysis, was seized with cholera and transferred to the Hôtel-Dieu. After the appearance of the choleraic attack, the syphilitic eruption became effaced and the paralysis disappeared.

A young woman of 23, the subject of syphilitic roseola with an eruption of the hairy scalp, had just been subjected by me to a specific treatment when she also was seized with cholera which caused both these eruptions to disappear. A young man whom I saw in the Hospital St. Louis, under the care of Dr. Lailler, was rapidly disembarassed of an indurated chancre by an attack of typhoid fever. These various facts distinctly prove, as it appears to me, that certain acute diseases, by occasioning great and rapid changes of nutrition generally, suffice to combat the manifestations of syphilis. Nor is there anything surprising in the fact that these diseases have upon nutrition an action to a certain extent comparable to that which specific agents exert upon syphilis.

Such is the description, somewhat brief no doubt, of the part which certain diseases may play in reference to syphilis; the influence

* *Traité des affect. cutan. symptomat. de la syphilis.* Paris, 1852, p. 177.

which the latter exerts upon those diseases calls for more particular attention. We shall consider it in cases of traumatism, in chronic diseases, and lastly, in acute diseases.

As regards the influence of syphilis upon traumatism, it is, says Swediaur,* an opinion accepted by several physicians, that the bones of persons affected with syphilis become more brittle, and that the patients, consequently, are more subject to fractures. The same author afterwards gives the case of a man who broke one of his legs and who, after remaining nine weeks in bed, had no consolidation of the fracture. It was then suspected that the syphilis of which he was the subject might well be the cause of the non-formation of callus; a mercurial treatment was adopted, the fracture united, and the patient was completely cured.

Quite recently, Verneuil has spoken of the action of syphilis upon wounds:—"You operate," says that skilful surgeon,† "for fistula of the penis in a syphilitic subject and fail to obtain union by the first intention. You adopt an appropriate treatment, you then operate again, and this time with success." An army surgeon, Dr. Guillemin,‡ has related, in support of the fact established by Verneuil, the case of a syphilitic patient in whom two small ulcers, resulting from excoriations of the fingers, did not heal until preparations of iodine had been employed. Delpech writes:—"We see venereal ulcers declare themselves upon the occasion of a wound, either in the latter itself, or in the neighbourhood of it. This complication is very rare and only occurs in cases of general infection and when the wound has existed for a long time."§ It must be borne in mind that chancres are not meant here, for that lesion, as we know, never develops itself in a wound, unless from actual contact with the venereal poison.

Amongst chronic diseases, scrofulosis and tuberculosis are those upon which syphilis appears to have the most influence. Gout and rheumatism are, in general, very little modified by that disease. Syphilis, according to Lugol,|| modifies the course of scrofulosis, but the cases which that observer gives in support of his assertion

* *Loc. cit.* p. 183.

† *Gaz. hebdomad.*, February, 1863, p. 134.

‡ *Gaz. hebdomad.*, July 17th, 1863, p. 473. Compare: Ambrosoli, *De l'influence de la syph. constit. sur les plaies* (*Gaz. Lombarde*, 44, 1863).

§ *Chirurgie clinique de Montpellier*, t. i. Paris, 1823.

|| *Recherches et observations sur les causes des maladies scrofuleuses*, p. 285. Paris, 1844.

are not significant, as they refer to individuals simply affected with gonorrhœa. Bazin * insists justly upon the property of syphilis to evoke manifestations of the scrofulous diathesis and to impart to them a tendency to suppuration ; this is a circumstance which I also distinctly observed in a case in which an outbreak of syphilis determined the appearance of multiple suppurating adenopathies. The influence of syphilis upon pulmonary tuberculisation has more particularly occupied the attention of authors. Morton, Morgagni, J. Frank, and Graves,† agree in recognising that syphilis is a debilitating cause which, in individuals predisposed to it, favours, accelerates, and aggravates the development of pulmonary phthisis. This opinion, which has for its chief supporters Laennec and Andral, is based, however, upon a small number of facts only, and, in that respect, is not, perhaps, altogether irreproachable. As for myself, I have observed only three cases in which syphilis appeared to me to have played the part of exciting cause in reference to the development of tubercles in the lungs. Three individuals debilitated and emaciated by syphilis were attacked by tuberculisation rather rapid in its course, which ended by carrying them off. Some authors do not hesitate to believe that syphilis is, of itself, capable of producing tuberculosis ; but that is a view which by no means appears justified. To prove that syphilis may engender tuberculosis, it would be necessary, says Gamberini,‡ to establish, by means of clinical facts, that individuals placed outside of all the conditions which predispose to phthisis, have been attacked by it in consequence of a venereal infection. But practical medicine cannot give so explicit an answer, and if, amongst the advocates of the opinion which connects tubercles with syphilis, there are some who claim to have cured phthisical patients by employing mercurial remedies, there is reason to believe, with the author quoted above, that they may have been deceived by syphilitic laryngo-tracheitis, as appears probable, at least, from the short space of time which sufficed for the cure. This, indeed, is the manner in which we have felt called upon to interpret elsewhere most of the known observations of venereal phthisis.

The simultaneous existence of syphilis and tuberculosis is, then,

* *Leçons sur les syphilides*, 1859.

† Syphilis and the abuse of mercury, says Graves, are the two causes which most favour the development of pulmonary phthisis.

‡ *Gazetta medica Italiana Toscana* ; 1852, and *Gaz. méd. de Paris*, p. 340, 1853.

rather rare, and it may be assumed that there exists between tubercle and the syphilitic product an antagonism analogous to that which exists between tubercle and cancer. But, the general law of the organism, by virtue of which the development of a given pathological lesion would arrest or retard the evolution of any process of a different origin, being true, it is solely by the debilitation of the economy which it occasions that syphilis is capable of giving an impulse to pulmonary phthisis. The question whether it can modify acute diseases is undetermined and has been very little studied. The few cases which we have observed are not sufficient to authorise an opinion on this point, and if, recently, we saw sink rapidly under hæmorrhagic small-pox a patient who, a month before, had contracted an indurated chancre, this was, no doubt, a mere coincidence.

To sum up, syphilis may be influenced in its course by the appearance of another disease, but is not generally aggravated. The manifestations of certain diseases, especially of scrofulosis and pulmonary phthisis, are sometimes evoked by syphilis; but it is by no means proved that they can engender them. With regard to them, it is, at the most, an exciting cause.

The whole influence of syphilis is not confined to this. According to certain authors, this disease is to be regarded, in some cases, as a preservative against other diseases. Lancisi states that he was informed by several physicians who had attended plague patients at Rome that none of those who had cauteries or *venereal* buboes in a state of suppuration were attacked by the plague.* I remember having heard tell that the epidemics of cholera which have raged in Paris have never visited the Hôpital du Midi (hospital for male venereal patients). It is true that this scourge appeared slightly at the Lourcine Hospital; but it is important to know that the patients who frequent that hospital are not all syphilitics. This remark appears to me the more important since Dr. Espagne has just published in the *Gazette Hebdomadaire*, September 15th, 1865, an interesting article to show the immunity from cholera in 1849, and in 1854, in the venereal and skin disease wards of the hospitals of Montpellier. To speak of the Hospital Saint-Eloi only, there were, in 1849, twelve deaths from cholera, and in 1854, 118, as well in the medical as in the surgical wards, and in neither of those two years did deaths

* *De bovilla peste, &c.* Romæ, 1715. See Carrère, *Histoire de la Soc. Roy. de méd.*, t. iv. p. 219, des mémoires. Paris, 1785.

occur in the wards set apart for syphilis or diseases of the skin. Was this the mere effect of chance? I should not venture to say so. Is it to the syphilis, or to the mercury employed in treating it that these effects are to be attributed? Dr. Espagne does not give an opinion on this point; but if I had to decide between these two alternatives, I should be inclined to regard the syphilis rather than the mercury as a kind of preservative against the cholera.

Lastly, Chassaignac has reported to the Surgical Society* that, out of twenty-five or thirty operations performed by him upon syphilitics, he had never seen one followed by purulent infection, and that clever surgeon bases upon those facts an opinion that a kind of antagonism exists between constitutional syphilis and purulent infection.

What are we to think of these various observations? That a real antagonism exists between syphilis and some other diseases? The actual data do not authorise us to affirm a fact so important. New researches should be made on this subject; but in any case an organism under the influence of syphilis appears little disposed to undergo the attacks of morbid causes.

* See *Gaz. hebdom.*, 1862, p. 604.

PART III.

SEMEIOLOGY.

§ 1. *Diagnosis.*

To study a given symptom in its various modes; to determine, by the aid of this study, the seat and extent of the lesion; then, these two factors being once known, to trace the evil to its source and to endeavour to ascertain the nature of it; such is the method which, in a clinical sense, enables us to arrive at an exact diagnosis and at really useful indications for treatment. But hitherto we have confined ourselves to tracing as rigorously as possible the clinical characters of the numerous syphilitic affections; we have now to render the data acquired available for the general diagnosis of syphilis, after which there will remain the comparison of that disease with those which most closely resemble it, and to draw from this comparative examination the signs which may enable us to avoid an error too often injurious.

Syphilis being a specific disease, many authors have imagined that it must necessarily have characters in relation with its nature and entirely distinct. Some of the physicians of the last centuries believed that these characters were to be found in the blood, and asserted that inspection of that fluid sufficed to insure the diagnosis. Jessenius de Jessen, a Hungarian physician, admits, in 1618, that a pale or white pellicle on the surface of the blood drawn from a vein denotes syphilis when it adheres to the rest of the mass like a tenacious skin; Melchior Friccius, in 1710, and G. D. Coschwitz, in 1728, uttered this same opinion, which was, moreover, so general that Astruc* felt called upon to combat and refute it.

Quite recently it has been thought that the characteristic sign of

* See Astruc, t. iv. pp. 106 and 107.

syphilis might be furnished by histology ; but the illusion was not of long duration. Robin and Virchow, as we know, do not accord any precise histological character to gummy tumours, and we participate in this view, despite the opposite opinion of Wagner. It is wrong, we think, to ask of the microscope more than it can give ; but it would be equally wrong not to avail ourselves of this instrument, which is a valuable means of examination. The naked eye, which judges of the form of the change and its totality, often leads us to data quite as positive and perhaps even more certain than the microscope, which enables us to see the elements and their reciprocal arrangement. And even if we admit with Wagner that there exist alveoli peculiar to syphilitic deposits, we cannot grant that this character is more important than those which result from the general physiognomy presented by an organ affected with syphilis, and especially by the consistence, colour, dryness, and peculiar arrangement of gummy tumours in the parenchymas. The peculiar colour of syphilitic eruptions is no longer a symptom which is always to be relied upon, and if it were, would constitute, at the very most, the characteristic sign of one period only of the disease with which we are occupied.

Beyond this, we must give up the idea of finding for syphilis a sign always certain and really pathognomonic. The physician who seeks to arrive at a diagnosis of this disease must take into consideration all the symptoms, examine them in their different modes, weigh and compare them, and seek for their filiation, so as to base his judgment, not upon this or that one of them, but upon the totality of them. Therein he will only follow the sage precept of the father of medicine,* when he says :—" A physician who wishes to form a correct prognosis must embrace in his glance all the signs, that he may weigh them and judiciously confront them with each other." But the signs of syphilis are divisible, as Astruc pointed out, into demonstrative signs and commemorative signs.

The demonstrative signs are unequivocal or equivocal, according as they belong to syphilis alone or to several diseases.

The unequivocal signs are few, consisting solely in mucous patches and indurated chancre, since pustular and tubercular eruptions are not observed in syphilis only. As regards gummy products, they are a positive sign only in so far as they are situated superficially and

† Hippocrates, *Prognostics*.

appreciable to sight; but even then it is possible to confound them with other lesions and especially with abscesses.

The equivocal signs, although of less value for diagnosis, must nevertheless not be neglected. They frequently offer in their modality characters truly pathognomonic: it is thus that behave most of the syphilitic eruptions of which the seat, form, and mode of grouping indicate pretty certainly, but not absolutely, the existence of syphilis; the same applies to exostoses and to most of the visceral lesions appreciable by the senses.

The commemorative signs are drawn from the information furnished by the patients, from the mode of evolution followed by the disease, and from the still existing traces of previous syphilitic lesions. The cicatrix of the chancre, those left by deep-seated syphilides or gummy tumours, the perforation or destruction of the velum palati, the flattening of the nose, &c., are so many commemorative, one might almost say demonstrative signs which, joined to doubtful manifestations, will permit of surely diagnosing syphilis. Numerous abortions without appreciable exciting cause also constitute a sign of great value. These latter accidents indicate syphilis in the father or mother, if not in both at once. By the aid of these general data, let us now proceed to the diagnosis of syphilis in its various periods.

When no external phenomenon (incubation period) yet reveals the existence of syphilis, the diagnosis of it is evidently impossible. Later on, the local reaction once set up (period of local eruption), it rests, as we know, upon two signs: the peculiar induration of the primary lesion with absence of suppuration, and the concomitant glandular adenopathies in the groins, neck, &c., with their characters of indolence, hardness, and mobility. The primary lesion having disappeared, the glandular lesions and persistent cicatrix are still very certain means for the formation of a diagnosis.

When eruptions have appeared, their dissemination over a large extent of surface, their coppery yellow or raw lean-ham colour, the absence of itching, and the coexistence of the glandular lesions mentioned above, combined with the information obtained concerning the primary lesion, are elements sufficient for arriving at an exact diagnosis. Let us add that mucous patches, with their peculiar characters, are frequently met with at this period.

These latter manifestations and the adenopathies are, in the absence of any cutaneous eruption, certain indications that the evil has not yet arrived at its last phase. In the latter (period of gummy pro-

ducts), the diagnostic signs change, but they are, at the same time, very different according to the seat of the morbid localisations. Upon the skin, the eruptions, usually of a coppery colour and not itching, are limited to a few scattered points, disposed in circles, in semicircles, or in a T form; they complete their evolution slowly and leave behind them cicatrices which are most frequently indelible. If it is a question of more deep-seated lesions, of muscular or osseous lesions, the absence of febrile reaction, the slowness of the evolution, the existence of continuous fixed pains with nocturnal exacerbations, and the presence of tumours firm at first and afterwards softening, are so many circumstances which may enable us to suspect, if not to recognise, the syphilitic disease. Lastly, when there supervene manifestations less accessible to our means of investigation, then the anamnesis and the modes of filiation of the lesions, the cachexia and some peculiar symptoms, such as deformity of the liver, accompanied or not by albuminuria, are conditions which aid greatly in the diagnosis, if they do not completely elucidate it. The simultaneous existence of several of the affections mentioned, or even of the traces which they have left behind them (cicatrices, &c.), is a useful auxiliary to which may further be added the results furnished by specific treatment. It is not our intention to repeat here what we have said of the diagnosis of syphilitic lesions considered singly in each of the organic apparatuses; but we must insist upon the circumstance that, as a general rule, several of these apparatuses are affected simultaneously. Thus cerebral or pulmonary localisations are usually accompanied by modifications on the part of the liver and of the deep-seated lymphatic glands; these latter changes, which are more common, are sometimes independent of any other visceral manifestation. One other point deserves our attention, viz., the general physiognomy of the patient, not that this physiognomy has in itself any peculiar stamp, for it interests the clinical observer rather by negative than by positive signs. The expression of the face, the colour of the skin, its elasticity, its suppleness, and the epidermis which covers it, if they do not at once put us upon the track of the diagnosis of syphilis, lead us, at least, to suspect the existence of that disease. By the aid of these various circumstances, it is possible, up to a certain point, to arrive by exclusion at the diagnosis of syphilis which, in reality, occupies an important rank in the list of chronic diseases.

To sum up, the diagnosis with which we are now occupied, what-

ever may be the period of the disease at which it is looked at, does not rest upon a single sign, but upon a totality of characters connected with symptoms having an entirely special order of succession.

Such, at least, is acquired syphilis ; as regards hereditary syphilis, which differs from acquired syphilis by the absence of a primary local lesion, it differs also by a greater acuteness in its course, by less regularity in its evolution, by a higher rate of mortality, and by the period of its appearance during the three or four first months of life.

First of all the tegumentary surface and soon afterwards the parenchymas are invaded. To the ordinary eruptions of acquired syphilis are here added numerous fissures in the vicinity of the natural orifices, pemphigus in the palms of the hands and soles of the feet, and coryza. To the appearance of good health which the child previously presented succeed a peculiar colour of the skin and a gradual wasting away, which give to the little patient the appearance of an old man. When it manifests itself at a more advanced age, hereditary syphilis is still generally recognisable, for, on the one hand, the lesions which it produces present rather peculiar characters, and, on the other hand, the individuals affected with it most frequently have a physiognomy which betrays the nature of the disease transmitted to them. The state of the dental system, the modification undergone by the two central upper incisors, the flattening of the nose, and the opacity of the cornea (chronic keratitis), are then frequent symptoms which are not devoid of a certain stamp. To these symptoms, moreover, are added in many cases smallness of size and a certain degree of arrest of development. Combined with the preceding analytical description, this synthetical summing up will suffice, I hope, to show when syphilis exists in a sick person, and whether that syphilis be acquired or hereditary. For greater certainty, however, we shall endeavour to give a succinct sketch of the analogies and differences between this disease and those which most closely resemble it : virulent, toxical, and constitutional diseases will be examined, in turn, in relation to syphilis.

On the first appearance of secondary symptoms, there sometimes exists a general reaction in the organism, with cephalalgia, extreme lassitude, and prostration of strength, all symptoms which may suggest the idea of typhoid fever, and that so much the more as they are often accompanied by anorexia and epistaxis. But this is only a resemblance of short duration, and a few days suffice to

remove all doubt. A closer analogy and, consequently, a greater difficulty for the diagnosis, is met with in reference to syphilis and the eruptive fevers, and especially to small-pox. Not only are these diseases inoculable, but they present phases of evolution almost identical, to such an extent that the preceding nosographical study is, so to speak, copied from the description of inoculated small-pox. In each of these diseases, there is a period of incubation, a period of local eruption, and a period of general eruption preceded by general phenomena (period of invasion). There ceases the analogy for common syphilis, the course of which continues by manifestations no longer observed in small-pox, but not for galloping or acute syphilis, the suppurative eruption of which, like the eruption of small-pox, is not always followed by ulterior symptoms. Lastly, that which distinguishes these diseases from each other in a clinical point of view, is, in addition to the difference in the lesions, the greater or less rapidity of their course. While variola and all the eruptive fevers require a few weeks only for the completion of their evolution, syphilis lasts, in general, several years. The incubation period of inoculated small-pox is, as we know, from seven to eight days; for the incubation of syphilis a month at least must be reckoned upon. The invasion of small-pox is of three days, that of syphilis, on the contrary, may be a fortnight; the same proportional difference exists in the periods of local eruption and of general eruption; the local lesions which form part of each of these periods also have their peculiar modality, and the general reaction which accompanies them is very distinct. This reaction, which is, as it were, always in relation to the degree of acuteness and the duration of the symptoms, is much less strong in syphilis than in small-pox, a circumstance important to know in cases of doubtful diagnosis.

Glanders and farcy resemble syphilis much more than do the eruptive fevers, and it is certainly not without some serious grounds that Van Helmont attributed syphilis* "to the abominable intercourse of a man with a mare affected with farcy." The opinion that syphilis may result from glanders has found advocates in later times;† attempts have been made to base it upon the circumstance, which is far from being proved, that glanders appeared at the siege

* *Tumulus pestis*, in article, *Peregrina lues nova*.

† See Ricord, *Lettres sur la syphilis*, 2^e édit., p. 136. *Lettre* du Dr. Beau.

of Naples at the same time as syphilis. In 1776, Jalouset,* a surgeon at Chatillon-sur-Loing, struck by the analogy between the two diseases, endeavoured to apply to them the same treatment; he sent to the Royal Society of Medicine the case of a horse affected with farcy, which, after five months of unsuccessful treatment, ended by being cured by the administration of Van Swieten's drops. Of late the studies of Rayer and Tardieu in reference to glanders and farcy have shown still more clearly the resemblance of syphilis to those diseases. "Amongst known affections, there is none to which I could better compare syphilis than glanders and farcy," justly remarks Virchow, "and that on account of the diversity of the local changes, the multiplicity of the organs and tissues attacked, and the succession of the manifestations."† For my own part, I know of nothing which, to the naked eye as well as to microscopical examination, approaches so nearly to syphilis as certain changes occurring in farcy. The testicles of a horse affected with chronic glanders presented me with what I would almost venture to call a perfect analogy to the gummy tumours of the same organ in man. In spite of these resemblances, it is very evident that the identity or even relationship of syphilis with glanders is by no means demonstrated. These two diseases present, in their source, their evolution, and some of their manifestations, marked differences. The glanders comes to us from the solipedes, in whom it develops itself spontaneously under given conditions; its incubation, although hitherto ill-defined in man, appears shorter, however, than that of syphilis, and was of a few days only in a case given by A. Bérard. In both diseases, it is true, the prodromata have very similar characters. "The premonitory pains of chronic farcy," says Professor Tardieu, "are usually general; it is a feeling as if the whole body were broken up, with shooting-pains which traverse the muscles of the trunk, and chiefly of the back and loins." But the nocturnal exacerbations of syphilis are entirely wanting in glanders. As regards the eruptions, they do not present in the latter disease the regularity of course observed in syphilis, they are suppurative and invade almost invariably the Schneiderian membrane, the mucous membrane of the air-passages, and the surface of the skin, without even presenting the diversity of form of the syphilitic eruptions. The more deep-seated

* *Hist. et Mém de la Soc. royale de méd.* Paris, 1776, p. 241.

† Virchow, *Syphilis constitutionnelle*, p. 176.

lesions of the joints and muscles are less circumscribed in glanders than in syphilis; they are also remarkable for a greater tendency to suppuration. The evolution is, moreover, always more rapid in the former than in the latter of these diseases.

Spedalskhed, or the elephantiasis of the Greeks (*lepra* of the Middle Ages), is, like syphilis, a disease with a long incubation period, which reveals itself by tubercular lesions of the skin and viscera and occasions various derangements. Consisting of so-called albuminous exudations, the tubercular lesions of *spedalskhed* differ very little from syphilitic gummy tumours, but they are found more frequently perhaps on the internal surface of serous cavities and in the sub-peritoneal cellular tissue; the softening which they undergo occupies at once their whole extent. Eruptions of dark patches, resembling wine-lees in colour and rounded in shape, combined with a feeling of uneasiness, lassitude, and rigors, are the usual premonitory symptoms of this disease. The tubercles are small soft tumours, reddish or livid, which vary in size from that of a pea to that of a walnut; their shape is very irregular and mammillated. The face is their favourite seat. They are generally endowed with sensibility, while the spots which precede them are always devoid of it. The skin is affected in its whole thickness, of which it is easy to convince one's self. Analogous lesions present themselves chiefly in the mucous membranes of the mouth, the nose, the larynx and the pharynx, whence follow manifestations differing very little from those of syphilis. In another form of *spedalskhed*, the anæsthetic, there exist also precursory symptoms, and bullæ of pemphigus are seen to appear, filled with turbid, lactescent serum. These bullæ, like the spots of the preceding period, are reproduced several times; then supervenes the anæsthesia, which is chiefly felt in the interstices of the fingers and toes. The hair frequently falls off, the nails become affected, the phalanges necrosed, and sensation diminished or lost. Lastly supervene paralyzes of movement, due apparently to exudations upon the rachidian meninges and to sclerosis of the spinal cord.

In spite of a certain degree of resemblance, the two diseases, nevertheless, differ notably. That *spedalskhed* is not contagious like syphilis is now placed beyond doubt; neither does it commence, like the latter, by a lesion always local, and, further, the spots of syphilis are of a coppery red colour, without elevation and without change of sensibility, while those of *lepra* are of a dark red, elevated above the

skin, slightly depressed at the centre, shining and as it were oily, and lastly, very frequently deprived of sensibility. Syphilitic tubercles, flat and copper-coloured, are generally much harder, more developed, and more numerous than those of lepra, which are of a dull yellow or bronzed colour. Lastly, the ulcerations of the elephantiasis of the Greeks, covered with brownish crusts, rest upon a base which is generally soft, while the ulcerations of the tubercular syphilide have irregular, perpendicular edges, a greyish floor and a ring of induration around their base.* The diagnosis of the visceral localisations of *spedalskhed* and of syphilis rests partly upon a knowledge of the commemoratives. Leprous alopecia is distinguished from syphilitic alopecia by being observed only upon those parts of the head attacked by the disease.

The diseases which, in the class of poisonings, require to be compared with syphilis, are mercurialism, iodism, and alcoholism. The distinction to be established between these diseases and syphilis is of the greatest importance, if we would avoid attributing to the remedies or to the hygiene what may belong to the malady, and *vice versa*. Let us add that, in this respect, mistakes have frequently been made. Mercurial poisoning, whatever may be the mode of penetration of the chemical agent, sometimes produces symptoms which are not without analogy to those of secondary syphilis: cutaneous eruptions, ulcerations of the mouth, tongue, or pharynx, necrosis of the maxillary bones, tremblings, and diarrhoea.

Acute mercurial eruptions, which are generally transient, are erythematous or vesicular; the eruptions of syphilis, more fixed and tenacious, frequently show themselves in the form of pustules or of tubercles. The latter are always and necessarily preceded by the primary lesion, the former in those cases only in which mercury was employed to combat the effects of the venereal disease. The former manifest themselves almost constantly at the same time as a more or less considerable salivation of the gums, while the latter never present these phenomena.

The mercurial ulcerations have for their peculiar seat the gums, the commissure of the jaws, the free edge of the tongue, the internal

* Consult: D. C. Danielssen and W. Boëck, *Traité de la spedalskhed ou éléphantiasis des Grecs*, trad. fr. par Colson. Paris, 1848. J. H. Guérault, *Observ. méd. recueillies pendant le voyage de son A. J. le Prince Napoléon dans les mers du Nord*. Thèse de Paris, 1857. Gibert, *Traité des maladies de la peau et de la syphilis*, 3^e édit. t. ii. p. 30.

surface of the cheeks, and rarely the pharynx and genital organs. The syphilitic ulcerations occupy, by preference, the velum palati, the mucous membranes of the nasal fossæ and of the larynx, and very frequently the genitals. The former, large and covered with a kind of pseudo-membranous pellicle, are accompanied by a peculiar and quasi constant fœtor of the breath. The latter, more distinctly circumscribed, have more analogy with ordinary ulcerations. Certain osseous lesions also are symptoms common to the two diseases; but while, in syphilis, these lesions are the direct effects of the general morbid condition, and may invade various bones, in mercurial poisoning they are phenomena consequent upon the stomatitis and generally remain limited to the jaws. Lastly, the cachexia presents distinct characters according as it is produced by the mercurial agent or by the syphilitic agent; rapid in the first case, it is slow and chronic in the second. With mercurialism there is pallor and discolouration of the integuments, puffiness of the face, œdema of the extremities, passive effusions into the serous cavities, constant diarrhœa, and sometimes loss of intelligence and trembling. In syphilis, the cachexia is always tardy, most frequently connected with visceral lesions, a dry, scaly skin, bronzed rather than pale, emaciation, and marasmus. It is unnecessary to revert to the fact that certain authors,* even recently, have asserted that most of the tertiary symptoms of syphilis are the consequence of a mercurial treatment. This opinion must appear altogether unfounded to anyone acquainted with syphilis and mercurial poisoning.

Iodine, and even iodide of potassium, administered injudiciously and unreservedly, may be the starting-point of symptoms which are not without some analogy with those of syphilis.† While rendering the circulation more active, these agents are sometimes capable of producing, on the part of the skin, erythematous, papulo-pustular, or vesicular eruptions; on the part of the mucous membranes, an intense congestion which becomes localised, by preference, in the nasal fossæ (coryza), pharynx, and conjunctiva. These various

* Hermann, *Die Behandlung der Syphilis ohne Mercur*. Vienna, 1857; and other authors to be quoted further on.

† Consult: Trousseau and Pidoux, *Traité de thérapeutique*, t. i. 1855. Rilliet, *De l'iodisme constitutionnel*, in *Gaz. hebd. de méd. et de chirurgie*, 1860. See the discussion raised at the Academy on the subject of this report, *Bulletins de l'Acad. de médecine* (same year).

manifestations, to which, in some cases, are added a cephalalgia sometimes intense, palpitation, giddiness, buzzing in the ears, and a kind of intoxication, are at least sufficient, under certain circumstances, to lead to error, especially when they are met with in individuals affected with syphilis. Let us add that confusion is all the more easy, as a certain degree of emaciation and of discolouration of the integuments is not rare in such cases.

Secondary syphilis, at its onset, sometimes shows itself with a totality of symptoms very little different: cephalalgia, lassitude, insomnia, slight acceleration of the pulse, and erythematous or papular eruptions. But, contrary to what occurs in iodism, the general condition is here only transient, while the fixed and tenacious eruptions assume characters perfectly well marked. It suffices then to be aware of the possibility of the mistake to know how to avoid it.

Chronic alcoholism resembles syphilis in certain points; like the latter, it is characterised anatomically by non-suppurative lesions affecting the web of the conjunctive tissue, symptomatically by various derangements and a special cachexia.* Alcoholism, however, never gives rise like syphilis to those circumscribed lesions the destruction of which is generally rapid, it always produces diffused lesions with a tendency to a definite organisation. In these two diseases, moreover, the starting-point of which is so different, the symptomatic evolution is also very dissimilar, and the form of the symptoms very distinct. It is scarcely possible, in fact, to confound alcoholic anæsthesia with that which may result from a syphilitic lesion.

At a certain period of its existence, syphilis presents a great resemblance to constitutional diseases: like those diseases, it is remarkable for the dissemination and uniformity of the lesions, and for the multiplicity and variety of the symptoms, and it has an uncertain duration and progressive course. Scrofulosis, like syphilis, proceeds by distinct periods: at its onset, superficial affections of the tegumentary system; later on, deep-seated affections which leave behind them indelible traces, peculiar adenopathies, then lesions of the bones, the joints, the muscles, and the viscera. In both diseases, the conjunctive tissue and the lymphatic glands are the parts most

* See in *Dict. encyclopéd. des sciences méd.*, Paris, 1865, t. ii., our article "Alcoholism."

frequently affected ; but, while suppurative lesions are almost entirely wanting in syphilis, they are, on the contrary, frequent in scrofulosis. This character, already well marked from the time of the first manifestations, sometimes continues to show itself during the whole course of the disease ; the impetigo, the ecthyma, the indolent abscess, the suppurative osteitis, the fungous masses of the synovial membranes in scrofulous subjects, differ notably, in that point of view, from the papules, the tubercles, and the syphilitic gummy tumours of the skin and sub-cutaneous cellular tissue, as well as from the specific modifications of the bones and joints.* Even the visceral lesions possess distinct characters in the two diseases ; amyloid degeneration is much more frequent in scrofulosis than in syphilis. Moreover, the seat of the morbid localisations is very different, for, to take the osseous lesions only, while those which acknowledge a syphilitic origin are situated in the continuity of the bones, the others occupy by preference their extremities. The cicatrices even are recognisable in these two pathological species : uneven, bridled, deep and coloured in scrofulosis, they are generally white, smooth, more regular, and more superficial in syphilis, in which they sometimes affect the form of a semicircle. Tuberculosis differs from syphilis by the seat of its manifestations. The liver is to the latter what the lung is to the former. A syphilitic lesion in any viscus almost necessarily indicates the existence of an analogous lesion in the liver. Several manifestations of rheumatism resemble those of syphilis : cutaneous eruptions, tendinous, periosteal, cardiac lesions, &c., often differ from syphilitic affections having the same seat only by the greater acuteness of the pain which accompanies them and by a greater degree of mobility.

Some of the lesions of rheumatism have even a close analogy of structure with the changes of syphilis. Nothing more nearly resembles a gummy tumour than those cases of partial arteritis the product of which is known under the name of atheroma. The chief difference lies in the seat of the anatomical localisation ; it is thus that the valves of the heart and the arteries, which are frequently affected in rheumatism, are, on the contrary, only exceptionally attacked in syphilis. The cachectic condition peculiar to each of these diseases is, moreover, entirely distinct, which is sufficiently explained by the causes which produce it.

* Bazin, *Leçons sur la scrofule*. Paris, 1863.

In rheumatism, the cachexia, which is generally the result of a cardiac lesion, is chiefly characterised by passive congestions, and by serous infiltrations of the sub-cutaneous cellular tissue and serous cavities; in syphilis, this same condition, which is generally connected with the modifications undergone by the hæmopoietic glands, reveals itself by progressive emaciation and marasmus.

Gout has less resemblance to syphilis than the preceding diseases; but it will not be out of place to quote here the distinctive signs which a very trustworthy author has given of the pains of syphilis and of gout. "And as to the syphilitic pains called gouty," writes A. Paré,* "they differ from those which are common (gout properly so-called), for the common pains have certain periods and paroxysms, and those of syphilis are almost continual. Moreover, common gout sometimes remains not only five or six years, but also the whole lifetime, concealed in the body of a man who lives carefully, without his feeling it, and yet his children may be affected with it, which is not the case with syphilis. Moreover, the gout which is called natural occupies the joints, and causes nodes there, within which is found a stony or chalky matter, and syphilis occupies the middle of the bones, rendering them carious and rotten.

The cancerous diathesis does not proceed, like syphilis, by successive periods; and those of its manifestations which might suggest the idea of tertiary syphilitic lesions are never preceded by the affections which we have referred to the primary phases of syphilis. They generally invade organisms healthy at least in appearance. But further, as we have already shown, cancerous affections differ from the localisations of syphilis by their histological characters.

§ 2. *Prognosis.*

In the nosographical part of this work, we made known the degree of danger of each of the numerous morbid manifestations of syphilis. We were then occupied with the local prognosis only, and have now to speak of the prognosis, not of such or such an isolated modification, but of the disease considered in its totality. That syphilis is a serious disease is an undoubted fact, but why and under what circumstances? Lastly, how can its severity be recognised

* A. Paré, *Œuvres*, liv. xix. ch. v. p. 446. Lyon, 1652, et édit. Malgaigne.

beforehand? Such are the questions which present themselves to us for examination.

The visceral lesions, in consequence of which syphilis sometimes ends in death, the cicatrices or deformities which may result from a lesion entirely local, the possibility of transmission by contagion or inheritance; such are the circumstances which, for the individual as well as for families, or even for society, render syphilis a formidable disease. The more deep-seated, extensive, and ancient the visceral lesions are, the more fear should syphilis inspire, and this fear should be the greater the more the organ affected is essential to life. In other words, the syphilitic affections of the air-passages, of the heart, and of the brain, are those which most compromise existence, being capable, in certain cases, of causing rapid if not sudden death. Lesions of the liver, although less formidable, are far from being without danger, whether from the ascites which they occasion, or from the hæmorrhages and cachexia which accompany them. The same may be said of the vascular blood glands, which lead equally to cachexia and marasmus, and place the organism in the conditions most favourable to the development of the ultimate complications, pneumonia and erysipelas. In most cases, in the actual absence of any manifestation, syphilis may be regarded as the sword of Damocles, which only waits for an opportunity of striking afresh the individual it has already wounded. Even after the cure, it leaves behind it abnormal adhesions, cicatrices more or less embarrassing, such as the attachment of the velum palati to the pharynx, contractions more or less considerable of the larynx, trachea, or bronchi, or the face may become the seat of repulsive deformities. But this is not all, for syphilis is communicable by contact, and frequently an individual has been seen to become a kind of epidemic focus. Syphilis generally renders the child responsible for the infection contracted by the author of its days, and in that respect it is to be considered as one of the most formidable of diseases. How many children sickly, puny, degenerate, or doomed to certain death from having inherited this disease! How many families extinct from not having escaped this scourge of reproduction!

Hereditary syphilis, a severe form of disease, does not always wait for its victim to see the light; it too often kills the child in its mother's womb, or soon after birth, and in any case leaves it exposed, sooner or later, to serious affections. In this respect, observation teaches that the danger is greater in proportion as the infection

occurs nearer to the moment of conception. The evil effect of the poison, therefore, decreases gradually. After delivery at the full time, children born alive have a chance of continuing to live (Bertin). This rule, however, is far from being absolute; but in general, the sooner syphilis develops itself after the moment of conception, the more it is to be dreaded. It scarcely ever spares the fœtus; the new-born child may escape from it, and later on it is not incompatible with a long existence, the adult sometimes succeeding in overcoming the evil of which his parents had not been able to disembarass themselves. In this manner certain hereditary diseases are seen to die out when sterility or the death of all the products has not led to a complete extinction of the race. The following statistics may give some idea of the gravity of hereditary syphilis. The mortality from syphilis being, in 1847, 565 for the whole of Great Britain, there were amongst that number 265 children less than a year old.* At Lyons, Dr. Gay found that out of a total of 5,327 deaths, nineteen resulted from syphilis, fifteen of which occurred in children under 10 years of age.† The syphilis of the father and that of the mother react with almost equal intensity upon the product of conception.‡ Some authors, however, attribute a more deleterious influence to syphilis in the mother. This influence, according to Pick,§ is very prejudicial; in 106 cases of syphilis transmitted by the mother, seventeen children were born before the full time, forty-four at the full time; eleven out of the seventeen and three amongst the latter being still-born. Out of forty-seven living children, four only lived more than three months, and the fate of two was unknown; as for the others, to the number of forty-one, the mean duration of life was twenty-six days, the shortest duration one hour, the longest ninety days.

Thus syphilis diminishes the number of births; it destroys the child at an early age, or, if not, yet does not spare it; later on, the disease may still reach it, and in any case modifies more or less its mode of being. In fact, there are serious grounds for regarding syphilis as one of the causes of the decrease of strength, the diminution in size, and the degeneration of certain families.

* Hunt, *On Syphilitic Eruptions*. London, 1854.

† Quotation from Diday, *Exposit. théor. et prat. des nouv. doct. sur la syphilis*. Paris, 1858, p. 381, in 12°.

‡ See Baerensprung, *Hereditäre Syphilis*. Berlin, 1864.

§ See *Schmidt's Jahrb.*, t. cxx. p. 194.

Age, sex, and hygienic and meteorological influences, are the conditions which, if they do not suffice to alter our prognosis of syphilis, modify it, at least, to a slight extent. At an early age, syphilis, as Dr. Roger has pointed out, is always more acute and more serious, and sometimes presents the stamp of malignity; sex does not modify it much, but unhealthy conditions, insufficient nourishment and want of cleanliness, have an evident effect upon its degree of severity. Numerous facts prove that sudden changes of temperature and humidity may exert the same influence. When it is complicated by another disease, syphilis is evidently more serious and more difficult to cure. The same holds good when it has undergone without good effect an appropriate treatment.

The prognosis of syphilis varies, further, according to the form which it assumes; little serious in the benignant form, this disease is already more so in the common, and still more so in the malignant form. As regards the periods, the last only is of a nature to cause great inquietude, the others, in general, compromising life but little.

Side by side with these prognostic indications, there are others drawn from the symptomatic modality, and not less important to know. In treating of chancre, we pointed out that the characters of that manifestation might aid in the general prognosis of the disease. In fact, this lesion presents a different prognostic signification according as it is more or less strongly indurated, or is or is not phagedænic or gangrenous, and, without agreeing with the too positive opinions of Carmichael and some other syphilographers, it must nevertheless be admitted that the peculiar modality of the chancre reveals the susceptibility of the organism to the action of the poison. With a very indurated chancre, and still more with a phagedænic or gangrenous chancre, serious pustular or ulcerating syphilides are to be feared, severe lesions of the mucous membranes, such at least would appear to be the legitimate conclusion to be drawn from the statistics collated by Bassereau.* In seventy-two cases of pustular syphilide, that author found: chancrous erosions, three; ulcerations attacking at least the whole thickness of the tegumentary membrane, and varying from the size of a lentil to that of a franc-piece, forty-

* Bassereau, *Traité des affect. de la peau sympt. de la syphilis*. Paris, 1852.

one; phagedænic chancres, twenty; serpiginous phagedænic chancres, four.

The syphilides, according to some observers, may have a prognostic value at least equal to that of the chancre. "If we would judge beforehand of the severity of a given case of syphilis, and foresee the disorders which it is capable of producing ultimately, the first syphilide," writes Diday,* "is the most valuable sign to rely upon. In fact, the greater or less intensity of the prodromata shows only the greater or less power of resistance in the constitution of the subject of them. . . . The syphilide alone, thanks to the very variable and very marked form in which it manifests itself, suffices to give a just idea what the syphilis will be of which it marks the onset. With a roseola pure and simple, continuing as such during the whole of its duration, not showing any tendency to become papular, and becoming effaced in ten or fifteen days, much is to be hoped; spontaneous cure is almost certain. But the contrary is not less true, and, at the time of my first essays, I remember having twice had cause to regret that I had combated with non-specific remedies only a case of syphilis the first outbreak of which had been a papular and squamous eruption. Vesicular and pustular syphilides also carry with them, of course, an unfavourable prognosis." We evidently could not pass over in silence these interesting remarks of one of the most esteemed syphilographers of our day, and if we do not entirely agree with them, under the idea that fresh researches are necessary upon so delicate a point, we none the less felicitate our Lyons colleague upon having been one of the first to enter upon a path altogether practical, and which, assuredly, promises to be useful.

A question often discussed is in place here, that of knowing whether, since the end of the fifteenth century to our own day, syphilis is on the decrease and tending to disappear. For the purpose of solving it, let us establish the primary severity of this disease. The following is the description given of it by Cataneus in 1505:—"Monstruosus morbus foetiditate magna, innumeris pustulis, ulceribus per totam faciem universumque corpus, magna etiam sævitia dolorum noctu præsertim humanum genus affligens laceransque nodositatibus instar lapidum, plerosque debiles et mancos effecit, et taliter in humanum genus grassatus est ut quodcumque genus mortis

* Diday, *Histoire nat. de la syphilis*, p. 119. Paris, 1863.

potius eligendum sit." Vigo, speaking of the pains which supervene in syphilitics, wrote:—"Doloribus clamoris laborant." We know Fracastor's account and that, with most of the authors of the sixteenth century, he admitted that there was, even in his day, a diminution in the intensity of the evil.* A Paré agreed in this opinion. "The syphilis of the present day," he says, "is much less cruel and more easy to cure than it was at the time of its commencement; for it is evidently becoming milder every day."† Astruc does not hesitate to partake of this view; and why not believe in these authors, worthy, in every respect, of our confidence, and recognise, with them, that there has been a diminution in the intensity of syphilis, especially when certain syphilographers, including Diday, admit a decrease in the power of the poison, which they attribute to the fact of its successive migration from individual to individual? This is doubtless difficult to judge of, for if the syphilis of our day is not comparable to that of the Naples epidemic, that may depend simply upon differences in the hygienic conditions. The severity of the endemo-epidemics of syphilis which have raged since the end of the fifteenth century is, at the very least, in favour of this view. If, in those epidemics, syphilis appeared more intense and more malignant, it was by virtue of certain accessory causes which presided over its extension, and thus it is not proved that syphilis is less severe now than it was at the climax of its existence. The inference drawn from the weakening of the vaccine poison is without value, since this weakening may depend, not upon the repetition of the transmissions, but upon the transfer of the virus from one species to another. Without wishing to maintain so strongly as Rollet that syphilis has not become at all milder since its origin, we think that if it has diminished in intensity, it has not done so to an extent to justify the hope, entertained by some authors, of seeing the disease become extinct spontaneously. On this point we agree with Fernel, who wrote: "Nisi Deus opt. max. sua elementia ipse extinguat, aut effrenem hominum libidinem temperet, nunquam extinctum iri, sed fore humano generi comitem et immortalem crediderim."‡

* See Historical Notice, vol. i. p. 27 of this work.

† Paré, *Œuvres*, t. ii. p. 533, édition Malgaigne. Paris, 1840, et édit. Lyon, 1852.

‡ Fernel, *De luis venerea curatione perfectissima liber*, cap. ii. See *Aphrodisiacus* de Gruner, p. 143.

PART IV.

ÆTIOLOGY.

CHAPTER I.

EFFICIENT CAUSE.—THE SYPHILITIC POISON ; ITS ACTION, ITS MODES OF TRANSMISSION.

VARIOUS opinions have been uttered concerning the efficient cause of syphilis. The first physicians who described this disease, influenced by the astrological ideas of their times, did not fail to attribute to the stars a share in its genesis. It is thus that P. Pincto,* Grunbeck,† P. Maynard, &c., ask themselves to what stellar influence or to what conjunction of the planets men owed the appearance of this scourge. Leonicens attributed it to the inundations of 1493. Other authors, imbued with the humoral or Galenic theories, admit with N. Massa,‡ that this evil has its source in a peculiar disposition of the liver, a kind of metastasis of bilious matter to the genital organs. By degrees, and in proportion as the influence of sexual intercourse in the propagation of the disease was recognised, these first ideas were abandoned. One of the contemporaries of the epidemic of Naples, Al. Benedetti, points out as the principle of syphilitic contagion a special cause, a *venereal tint*, the origin of which he places in the change in the humours exhaled by the genital organs of the woman. Paracelsus, who was one of the first to adopt the denomination *lues venerea* given by Bethencourt, almost divined

* Pincto, *Tractatus de morbo fædo et occulto, his temporibus affligente*, 1499, cap. iv.

† Grunbeck, *Tractatus de pestilentia Scorra sive mala de Franzos*, 1503, cap. iv.

‡ N. Massa, *De morbo gallico liber*, cap. iv.

the true nature of syphilis, when he pointed out the *venereal miasm*, which he regarded as the constituent principle of the disease. Once introduced into the economy, this miasm combines with all other diseases, modifies them, and gives them a new form; but its effects do not stop there, for Paracelsus, pushing his system to its extreme limits, admits that this miasm may produce a number of affections, such as phthisis, dropsy, diarrhœa, the exanthems, lupus, cancer, &c.

Whether there be evidence of genius in the views of Paracelsus or not, the credit cannot be denied him of having suspected at one and the same time both syphilis and most of its numerous effects. Fernel* points out in a more precise manner the true cause of syphilis. The cause of the venereal disease, he tells us, is an occult and poisonous quality contracted by contagion, inherent in some matter or humour, which serves it as a vehicle and carries it into the economy.† Thus, according to that great physician, the air and the breath cannot communicate this disease, and the contact of some matter which contains the poison and serves it as a vehicle is necessary.‡ Under these circumstances, syphilis comes into the class of contagious diseases, and Fernel does not fail to compare it to hydrophobia and poisoning by the bites of animals. In this manner, he passes judgment upon all the strange opinions which prevailed before his time concerning this new disease. After Fernel, the doctrine of the virus was, however, not yet adopted. Varendal, taking up again the ideas of Massa and Fallopius, makes the liver once more the starting-point of the lesions of syphilis. Nicolas de Blégny believed that the generating or material cause of venereal diseases was due to acids. Many other opinions not worth recording have been emitted on this subject.

Physicians of high authority, Astruc, Boerhaave, Van Swieten, and several others, declared themselves advocates of the virus theory, which, later on, was definitively established by the experiments of Hunter. Set aside by Broussais and his school, this theory has again been adopted by Ricord, and at present few persons think of disputing it. But the authors who admit the existence of a syphilitic

* Fernel, *De luis venereæ curatione perfectissima liber*, cap. iv.

† Luis venereæ virus, non inspiratu, sed humore in quamvis partem cutis nudam defixo, sensim prorepat in omne corpus.

‡ *Loc. cit.* cap. i.

virus are not all agreed as to the properties and qualities of this morbid principle. Chemical and micrographical researches have not taught us anything concerning the essence of it. Numerous hypotheses have been started to explain its nature. Certain authors regard it as an acid or alkaline substance, or even as an acrid and corrosive poison; others as a ferment, a leaven, or even an incorporeal, invisible principle (Fernel, Cazenave).

Amongst these theories it would be useless to pronounce a decided opinion until exact and numerous analyses shall have determined clearly the physical and distinctive characters of this agent. These researches have still to be made, but the method by which they should be undertaken is all traced out since the recent experiments which have shown that the virulent principle of vaccine lymph resides in solid granulations, or rather in living organisms disseminated in the clear and transparent liquid which serves for inoculation. In any case, on the hypothesis that we may succeed in finding in the syphilitic poison these inferior organisms which play the part of ferments, there would still be the difficulty of experimenting upon human beings, and of proving that these organisms constitute, in reality, the virulent principle. If we may believe Dr. Salisburg (*American Journal*, U.S., cix., p. 17, Jan.), it is an algoid vegetation which produces syphilis; but before accepting the fact that this algoid filament exists as described by that physician, and especially before admitting that it may produce syphilis, we must wait for fresh researches. The subject has hitherto been little studied, probably on account of the difficulty of procuring the virus in a state of simplicity and purity. What we do know is, that it is a fixed and not a volatile principle, contained in a clear, transparent, opaline, slightly viscous fluid, to a certain extent analogous to vaccine lymph. This is, doubtless, not sufficient to distinguish it from any other organic fluid of the same colour and the same fluidity; the peculiar character of virulence is not indicated, and hitherto is only recognisable by its effects upon the organism; but that is enough, nevertheless, to distinguish it from every other principle. Purulence is here opposed to virulence; for, so soon as pus appears, the virulent power diminishes, and contagion is often impossible. The liquid which is seen to ooze from the surface of the chancreous erosion is the best type which can be given of the syphilitic virus; then, in fact, this virus is not mixed either with the detritus proceeding from a chancre much indurated and already

in a process of retrograde evolution, or with the pus secreted by the chancre during the healing process, or with the pustule of ecthyma, or any other lesion; neither is it mixed with numerous epithelial cells, or with globules of mucus, as happens when it proceeds from mucous patches.

The product of morbid secretion, this virus is the effect of a disease of which it may become the cause, in the same manner that fruit, produced from a seed, may, in its turn, under given conditions, produce similar fruit. There is nothing extraordinary in this, and let it not be said that this virus does not play any other part than that of occasional cause. Evidently, to produce syphilis, there is need of a predisposed organism, just as the seed requires fitting ground for its development. It is useless, then, to continue these speculations. This virus communicates its properties to the substances with which it is brought into contact, and these substances, like the virus itself, exert a specific action only on condition of not having undergone any change. Certain agents, such as acids, alkalies, chlorine, modify it greatly and deprive it of its deleterious qualities, and it appears that mortification of the tissues which are the seat of this pathological secretion leads to the same result. As regards its absorption, many authors have asked themselves how it is effected; but this question ill bears discussion: the agents of the absorption of the syphilitic poison are those of other substances, viz., the venous capillaries and more especially, perhaps, the lymphatic vessels.

Another point more important in reference to therapeutical applications consists in determining whether the absorption of the poison is immediate, or whether it only takes place after a certain time, and after a kind of multiplication of the morbid agent in the vicinity of the part contaminated. We have already stated what is to be believed on this subject; * let us add that removal of the syphilitic chancre does not, any more than cauterisation of it, prevent the infection from manifesting itself, as has been proved by carefully-made experiments. Evidently, before accepting positively the immediate absorption of the syphilitic virus, it would be necessary to perform the same experiments which have been carried out with the vaccine virus, first to inoculate, then to wash the wound, cauterise it, apply a cupping-glass to its surface, and if, under such circumstances, chancre and its consequences appeared, it is clear that not the least

* See Davaine, *Comptes rendus de l'Académie des Sciences*, 1865.

doubt would exist. But the duty which requires that we should not risk the health of our fellow-creatures renders such experiments impracticable. In reality, have we much need of this with the information acquired from the vaccine virus, the great analogy of which with the syphilitic virus is known, and is there not great reason to believe that, like the vaccine and small-pox poisons, that of syphilis becomes disseminated in the various parts of the body, not germinating in one place, and that the whole economy undergoes at once the impression which it is capable of receiving from it? But it cannot be admitted that all the principles known, rightly or wrongly, under the name of poisons, behave in the same manner. The malignant pustule exerts, from the first, an action entirely local; but this difference, into the reason of which we shall inquire again, may depend upon the special constitution of the contagious matter, which contains an abundance of bacteria. The difficulty of absorption of these corpuscles may explain, in fact, the local condition which here precedes the general condition, and also the non-infection of the fœtus by the mother in inoculation with the malignant pustule,* as shown by M. Davaine. Without insisting further upon the analogy or the differences which exist between virulent principles,† let us see how we may conceive the mode of action of the syphilitic poison upon the tissues and organs.

Is the poison in the blood? To this question Hunter answered in the negative. According to that author the blood is not inoculable; but experiments which we shall quote further on prove distinctly that that fluid, taken from an individual in the secondary period, is capable of communicating syphilis to a healthy individual. Thus there can be no doubt that the poison of syphilis, at a given moment, exists in the blood. But, this being granted, two hypotheses are admissible. The blood may be virulent because the economy, impressed and modified by the contaminating drop, is fitted for secreting the virulent matter. This first hypothesis requires that

* In female rabbits inoculated by him with the malignant pustule, M. Davaine was able to ascertain the perfect health of all the progeny, and while he found bacteria in the placenta, the blood of the fœtus was entirely free from them.

† Consult on this subject: Vauthier, *Du virus syphilitique et de ses effets*. Thèse de Paris, 1850. Ch. Robin, *Sur les états de virulence et de putridité de la substance organisée*, Comptes rendus des séances et mém. de la Soc. de biologie, t. v. série iii. Péter, thèse citée. Paris, 1863.

all the humours should be virulent, which is not the case. Or the blood may be virulent because the contagious principle has mixed with and multiplied itself in it. This latter hypothesis appears more probable. Admitted by Astruc, accepted by Rollet, the multiplication of the syphilitic poison rests, in reality, upon no proof; but there is also no fact to contradict it. If it be true, however, that this poison becomes disseminated by attaching itself to one or other of the principles of the blood, we have to ask with which of those principles it combines by preference. And then it appears that it is to the globules rather than to the serum, since, in the cases of inoculation of the blood hitherto performed successfully, the success was attained only when blood globules were employed for the operation, and the transmission of syphilis from an infected mother in the course of pregnancy to the fœtus, or from a syphilitic fœtus to the mother, is a comparatively rare occurrence, which would doubtless not be the case if the serum served as a vehicle to the syphilitic poison. Thus the syphilitic poison appears to attach itself by preference to the blood globules and, carried by those elements, goes to modify the tissues.

B. Bell and the majority of syphilographers believe in a direct action of the syphilitic poison upon the blood; but this opinion appears little admissible. By the effects which it produces, this poison is, in our opinion, altogether comparable to certain irritant poisons, such as alcohol, which acts rather upon the solid than the liquid parts. In fact, like alcohol and many other substances, the syphilitic poison contained in the blood acts upon the network of the organs, in which it occasions, at the same time with hyperæmia, the development of elements of new formation.

Such is the period of the disease in which all the lesions which furnish a product of secretion are contagious and inoculable. Things run this course during a certain time (period of chancre and secondary affections). After remaining a longer or shorter time in the economy, the virulent agent is eliminated; it is no longer either in the blood or in any of the products of physiological or pathological secretion, since the blood and those products have ceased to be inoculable, as is proved by experiments made on this subject. The disease, however, has not completed all its phases, and the organism continues to suffer. The evolution of the malady goes on and fresh manifestations supervene, just as we see in a drinker who has long abstained from strong liquors, symptoms appear which it is impossible to attribute

to anything but alcoholism. In this state, which is the really chronic period of the disease, it becomes evident that the organism has undergone a modification and retained a peculiar aptitude for producing at various points of the body derangements which, anatomically, are characterised by a special hypergenesis of the connective tissues. To the simple impression made by the poison has succeeded impregnation, and there results from it a modification of the whole organism so profound as to disappear with difficulty. The individual affected has acquired the syphilitic constitution, he is no longer a normal being, but an individual deviating from the type, having undergone a kind of degeneration.

After having spoken of the syphilitic poison, there would be reason, doubtless, for asking what is its degree of force at the present time, and of inquiring whether, as certain authors suppose, it has diminished in intensity since the end of the fifteenth century. This question having been discussed elsewhere, we shall not dwell further upon it.

§ 1. *Contagion.*

After having attributed to syphilis causes more or less imaginary, the first syphilographers ended by recognising that this disease was the habitual if not constant effect of contagion. At first they admitted that the contagion might take place at a distance; but in 1512, J. Almenar already spoke ironically of the cases of transmission of this nature, which are to be believed religiously, he says, because they have been observed in several religious persons. Fracastor (1530) declares that syphilis is no longer seen to be transmitted by the medium of the air. Vidus Vidius (1550) and Fernel deny that this mode of contagion ever existed. From that moment, contagion was accepted by most syphilographers, not only in the case of sexual intercourse, but in consequence of any kind of contact a little prolonged, direct or indirect, and especially by suckling, by the common use of household or other utensils, and by inheritance.

The error of that period was to admit the transmission of syphilis without distinction of periods and by all kinds of humours, pathological or physiological, especially by the milk, the perspiration, the saliva, &c. Nevertheless, the two modes of propagation of syphilis, contagion and inheritance, were known. Hunter would not believe in the hereditariness of syphilis. A celebrated school has more recently denied the contagiousity of secondary lesions. But, to the

numerous observations of ancient authors have been added facts which, at the present day, place beyond doubt the mode of propagation by those lesions.

SOURCES OF CONTAGION.

Hunter showed without difficulty the small value of the opinion which, up to his time, regarded as so many sources of syphilis all the humours of persons affected with that disease. The inoculations which he practised upon individuals already diseased were, however, far from leading him to the truth. Starting from the result of his inoculations, he arrived at the conclusion that primary chancre and gonorrhœa are the only inoculable lesions. According to him, constitutional lesions and the blood are not contagious. This must be so: since syphilis does not generally become doubled, the lesions which Hunter regarded as contagious could not, consequently, be syphilitic. Ricord, repeating the experiments of Hunter about 1836, arrived at the same conclusions; but, like Balfour, Bell, Hernandez, &c., and contrary to Hunter, he regarded gonorrhœa as a special disease, different and altogether distinct from chancre.

However, about the same time at which Ricord threw fresh lustre over the opinions of Hunter, a singular reaction took place in the very country of the latter. In 1835, Wallace proceeded, like Hunter, by aid of experiments; but, instead of inoculating the patient himself, he took up the idea, little praiseworthy, no doubt, in a human point of-view, of transferring the contagious principle from a diseased to a healthy individual. But the consequences which resulted from this mode of experimenting were altogether different; secondary lesions, of which Hunter had denied the contagious character, produced positive results in the hands of Wallace, and from that time a fatal blow was given to the doctrine, a step had been made, a new doctrine had sprung up. In fact, the experiments Wallace repeated showed that the contagious humours are furnished by multiple lesions, and that they are generally the effect of a pathological, more rarely of a physiological secretion.

The products of pathological secretion are contagious only on condition of their having a specific origin. "The non-specific morbid secretions of a syphilitic subject (pus, catarrhal matter, serum of eczema," &c.), writes Diday,* "are not contagious. I inoculated

* *Gaz. méd. de Lyon*, February, 1865, p. 47.

unsuccessfully a healthy young woman with the matter from a pustule of iodic acne taken from a syphilitic patient in the climax of secondary eruptions." The inoculation, by the same experimenter, of the serous discharge of eczema was equally unsuccessful. Drs. Rollet and Viennois * showed, at the Lyons Medical Congress, that pure vaccine matter taken from a syphilitic subject transmits the vaccine poison only. The mucous fluid which escapes from the nose of a child suffering from syphilitic coryza has, however, been regarded as contagious. Chabrely † and H. Roger ‡ have given cases which leave no doubt as to this point; but it may be asked whether this secretion was not the product of mucous patches.

The syphilitic lesions which give birth to the contagious principle are those called primary and secondary.

1st. *Primary lesion*.—Whether manifesting itself in the form of indurated chancre or chancrous erosion, the primary lesion is eminently contagious. Two sets of proof support this proposition; the one set are clinical, the other experimental. The clinical facts are numerous, and it would be tedious and troublesome to quote them here. Dr. Alf. Fournier gives several instances of it in his inaugural thesis, § and adds: "Let it suffice for me to say that, in a series of seventy-two observations, indurated chancre has always produced (in healthy subjects, of course) a chancre of the same nature, and always, under these circumstances, syphilis has followed the chancre on both sides."

Experimental facts are no longer rare at the present day, and those furnished by Rinecker, || Gibert, ¶ Rollet, ** and Baerensprung †† leave no doubt on the mind. The primary lesion or infecting chancre is, then, contagious. Mixed or hybrid chancre is also capable of transmitting syphilis. The same holds good for phagedænic chancre; the latter is, however, less to be feared in this respect. It has been asserted that simple chancre, developed in a syphilitic subject, might

* See Bouchard, *Gaz. hebd. de méd. et de chir.*, 1864, p. 700.

† *Journ. de méd. de Bourdeaux*, Jan. 1859.

‡ *Union médicale*, 1865.

§ Alf. Fournier, *De la contagion syphilitique*. Thèse de Paris, 1860. See also Ricord, *Leçons sur le chancre*. Paris, 1860, p. 252.

|| See *Archives de médecine*, t. ii. p. 597.

¶ Gibert, *Traité des malad. de la peau et de la syph.* Paris, 1860.

** Rollet, *Recherches sur la syphilis*, 1861.

†† *Annalen des Krankenhauses in Berlin*.

have the same property. Five cases bearing upon this point collected by Fournier, and three others furnished by Melchior Robert, seem to show the possibility of syphilitic contagion under such circumstances; but when these cases are examined with care, it is soon recognised that they are far from being altogether conclusive. The details are wanting as to the characters of the chancre which was the source of infection. In one case it is stated (obs. by Cullerier) that the chancre was a simple one or soft at the base; but not all syphilitic chancres, as we know, have a distinctly indurated base, especially in women. Moreover, did no secondary lesion exist there? This is a question difficult to answer, but however the case may be, if the chancre with a soft base in syphilitic subjects may be transmitted in the form of an infecting chancre, this contagion, even by Fournier's account, must be rare. Again, the pus of a simple chancre, developed in a syphilitic subject, was inoculated by Basset and produced only a simple chancre. Soft chancre, with perpendicular edges, in an individual not affected with syphilis, evidently does not transmit syphilis; we have already stated this opinion,* which we consider well founded until further proof against it has been brought forward.

The question of syphilitic contagion by means of gonorrhœa naturally presents itself here; but further discussion of it is quite uncalled-for. It has already been established† that gonorrhœa is a disease distinct from syphilis, and that it cannot produce the latter. Pure gonorrhœal mucus taken from a syphilitic subject and inoculated in the skin, as performed by Basset,‡ is not capable, moreover, of transmitting syphilis. There is nothing contagious, then, in a syphilitic subject, amongst the products of morbid secretion, except those which have a specific origin.

2nd. *Secondary lesions.*—The contagion of secondary lesions, like those of the primary lesions, rests upon clinical and experimental facts. The clinical facts are numerous and go back to a very remote period, since G. Torella already speaks of the transmission of syphilis between nurses and nurslings. It would be interesting, but much too long, to make known all these facts, of which a certain number have been collected by Rollet§ and by Alfred Fournier.|| The ex-

* Vol. i. p. 102 of this work.

† Vol. i. p. 92 of this work.

‡ See Lettre de Bouchard (*Gaz. hebdom.*, 1864, p. 706).

§ Rollet, *Du chancre produit par la contagion des accidents secondaires* (*Archives de médecine*).

|| Fournier, *De la contagion syphilitique*. Thèse de Paris, 1860. Com-

perimental facts, which are more rare, carry with them a more absolute degree of certainty. We need not quote them here, having already given an abstract of the majority of them; a glance at the Table at page 69, Vol. I., conveys more information than any description. That Table not only shows that the majority of secondary lesions are contagious, it points out that the degree of contagiousity of those lesions is in proportion to the period of their apparition and to the abundance of their secretion, or in other words, the sooner they show themselves, and the more they secrete, the more apt are they to transmit the diseases from which they spring. Thus, mucous patches seem to hold the first rank, then come pustular syphilides, all manifestations of the period of general eruption. The pustule of ecthyma, which served for the inoculation in Vidal de Cassis' case, evidently belonged to that period, for only some months, at most, had elapsed since the disappearance of the chancre. With the exception of roseola and papular syphilide, which do not furnish any product of secretion, secondary lesions are, then, transmissible by contact; thus we have been able to advance that one of the characters of syphilis at that period is its contagious property. Is that characteristic sufficient to distinguish secondary manifestations from tertiary manifestations? That is more than we dare affirm; but what it is possible to say is, that there does not exist at present a single case to prove the contagiousity of the affections grouped in our last period.

No experiment, it is true, has been made hitherto concerning the contagiousity of the tardy deep-seated syphilides. Diday convinced himself by experiments that tertiary lesions are not inoculable. Other experimenters have arrived at results equally negative, and in

pare: *Bulletin de l'Acad. de méd.*, May 24th and 31st, 1859; *ibid.* t. xxiv.; Gibert, *Traité des maladies de la peau et de la syphilis*, t. ii. p. 483, 1860. Follin, *De quelques doctrines modernes sur la syphilis et la syphilisation* (*Archiv. de méd.*, February, 1856). Lasègue, *Même Journal*, May, 1858. Guyenot, *Gaz. hebdomadaire*, et *Gaz. méd. de Lyon*, 1859. Langlebert, *Moniteur des hôp.*, No. 61, 1859. De Castelnau, *Transmissibilité des accidents second.* *Moniteur des hôp.*, Nos. 65, 66, 67, 70, 1859). Gabalda, *De la contagion des accidents second. de la syphilis*. Paris, 1859. Joulin, *Moniteur des hôpitaux*, No. 10. Saurel, *Transmission de la syphilis second.* (*Revue thérap. du Midi*, xiii., July and Aug.). Junquet, *Syphilis congénitale contagieuse* (*Montpellier médical.*, Aug., 1859; *Gaz. hebdomadaire*, 1859, No. 46). Friedberg, *Kann die Syphilis auch durch andere Secretionen übertragen werden, als durch Schankereiter?* (*Behrend's Syphilidologie*, t. ii. part 2).

spite of the numerous punctures which I have made in my skin whilst making post-mortem examinations of bodies in which gummy tumours existed, I have never contracted anything. All observers do not, however, appear to be agreed upon this point, and Dr. Craith* admits the contagiousity of certain forms of tertiary syphilis. In any case, if it be true that the contagious power may still exist in the last period, it is at least much weakened.

The earlier syphilographers admit freely enough syphilitic contagion by the physiological secretions, and especially by the milk and semen. However, as they do not give any distinct observations on this point, the study which we are about to make of it is, so to speak, quite new.

The blood.—Hunter did not admit syphilitic contagion by the blood; this fluid, according to that observer, has no contagious quality. If, he said, the blood could produce syphilitic inflammation in a healthy wound, no subject who has venereal matter in circulation, that is to say who is affected with constitutional syphilis, could, under certain circumstances, escape a venereal ulcer; every time he was bled, or scratched himself with a pin, the small wounds thus produced would be transformed into so many chancres.† Not knowing that syphilis cannot become doubled, Hunter reasoned in this way; it never struck him that to ascertain whether syphilitic blood is contagious, it is necessary to inoculate a healthy person and not one syphilised. But what Hunter did not do, Waller, of Prague, had the boldness to do. On the 27th of July, 1850, in the presence of a great number of physicians and pupils, he inoculated a boy of 15 with the blood of a woman affected with secondary syphilis. On the 31st of the following month, tubercles were observed at the points of insertion, which were followed soon afterwards by secondary symptoms. Gibert performed a similar operation with equal success.‡ In 1856, the Secretary of the Medical Society of the Palatinate announced to that body that a physician who wished to remain incognito had inoculated nine healthy individuals with the blood of a person affected with secondary syphilis: of this number three only, in whom a large absorbing surface had been rubbed, were inoculated successfully.§ On the 6th of February, 1862, in pre-

* *On the tertiary forms of syphilis proving contagious* (*Med. Times and Gazette*, March 19th, 1859).

† *Complete Works*.

‡ Gibert, *Traité des maladies de la peau et de la syphilis*.

§ See Lasègue, *Archives génér. de méd.*, t. i. p. 603, 1858.

sence of all the physicians of the Florence school, Pellizzari who, in 1860, had tried two inoculations without result in the persons of Drs. Belli and Testi, repeated his attempts upon Drs. Bargioni, Rossi, and Passigli, who offered themselves courageously.* Two of these inoculations remained without result; but on the 3rd of March, Dr. Bargioni saw appear on his left arm, at the point of insertion, a papule with a hard base, accompanied by adenopathies in the axilla, and followed, later on, by secondary symptoms.

By adding to these cases four negative inoculations performed by Dr. Thiry, and three others furnished by a physician at Albi, Dr. Lalagade,† we arrive at a total of twenty-three operations, of which six only were followed by a positive result. The following is a tabular view of these cases :—

	Inoculations.	With success.	Without success.
Anonymous from the Palatinate	9	3	6
Waller	1	1	—
Gibert	1	1	—
Pellizzari	5	1	4
Thiry	4	—	4
Lalagade	3	—	3
	<hr/> 23	<hr/> 6	<hr/> 17

It is clear that the negative facts here cannot annihilate the positive facts; a single one of the latter suffices to make us admit the contagiousity of the blood of persons affected with syphilis. For my own part, I do not doubt this contagiousity after Pellizzari's case and the details which have been furnished me by the courageous champion who was the object of it, my excellent colleague and friend Dr. Bargioni, of which the following is the account :—

The woman whose blood served for the experiment was 25 years old, unmarried, and in the sixth month of pregnancy. . . . She presented very confluent and very moist mucous papules on the genitals; one of these, situated upon the left labium majus, near the lower commissure, where the patient informed us she had had the first manifestation of her disease, was larger and more raised than the others, and had a base with evident specific induration. This was either the infecting chancre transformed into a mucous patch, or a mucous patch which had developed itself

* See *Gaz. hebdom. de méd. et de chirurgie*, 1863, p. 349.

† *Revue thérap. méd.-chirurg.*, June 25th, 1859.

upon the cicatrix of the primary chancre. There were also seen mucous papules around the anus, and greatly enlarged glands, hard and indolent, in the groins. There existed, moreover, a confluent erythema, adenopathies in the back of the neck, and firm pustules on the hairy scalp. No treatment had been used; she was bled from the cephalic vein of the right arm; no eruptive manifestation existed at this point, which had been washed previously. The surgeon had washed his hands carefully, and the tape, the lancet, and the receiving vessel for the blood were all new. As soon as the blood was drawn, a pledget of lint was dipped in it and applied to the upper and outer part of Dr. Bargioni's left arm, near the insertion of the deltoid, where the epidermis had been removed and three transverse incisions made.

M. Rossi was operated upon in the same way, but with this difference, that the epidermis had been removed from the upper and outer part of the left fore-arm, and further that the blood applied had already become cold. M. Passigli was inoculated in the same region and in the same manner as M. Bargioni; but the blood was almost completely coagulated, and for that reason, in addition to the liquid portion, a part of the clot was applied to the excoriated surface. The extent of surface destined for the inoculation was two centimeters in length by one centimeter in breadth.

The bandage used for M. Bargioni was taken off in twenty-four hours, and nothing peculiar was observed, except a slight blackish crust due to the drying up of escaped blood. The same day, the bandage was removed from the arms of the two other doctors, and nothing remarkable presented itself. Four days after, all trace of the inoculation had disappeared.

On the morning of March the 3rd, during my visit at the hospital, M. Bargioni told M. Pellizzari that at the centre of the surface on which the blood had been inoculated he had observed a slight projection which itched a little. M. Pellizzari examined the arm and saw at the point indicated a small papule rounded in shape and of a rather deep red colour; no induration was observed at the base of the papule, nor any swelling of the axillary glands. M. Bargioni was requested to place upon the papule lint smeared with simple cerate to prevent any friction. This papule, which was carefully examined every day, increased so much as to attain, in a week only, the size of a twenty-centimes piece.

On the 11th, it was covered with a fine silvery scale, which was closely adherent; on the following days, this scale became thicker, less adherent, and began to split at its centre.

On the 14th, two glands were observed in the axilla of the size of a small nut, movable and indolent like the papule, the sensibility of which latter had, however, become somewhat increased.

On the 19th, on pressing the scale which covered the papule, there was seen to issue from its periphery a small quantity of purulent serum, and pressure occasioned slight pain; the glands in the axilla had become larger and harder, but still remained indolent. No induration was observable at the base of the papule.

On the 21st, the scale had become transformed into a true crust, which

at some points of its periphery, began to be detached, leaving plainly to be seen beneath it an ulcerated surface, slightly indurated at its base.

On the 22nd, after the crust had been removed, a *funnel-shaped* chancre was seen; its edges offered a certain elastic resistance, so as to represent well-marked annular induration; they were swelled, adherent, and obliquely inclined towards the floor of the chancre, which was almost dry and covered with a layer which was almost diphtheritic. There was scarcely any pain. The sore was dressed with dry lint.

On the 26th, the chancre was of the size of a half-france piece; it secreted more freely; its appearance was that of a small funnel reversed. The induration had greatly increased. The simple local treatment with dry lint was continued. Before commencing any internal treatment, Dr. Bargioni wished to wait for general symptoms. Nothing remarkable presented itself until April 4th; the chancre remained stationary, with a granular floor; the glands remained large, hard, and indolent.

On the 4th of April, there was slight nocturnal cephalalgia, which continued for two or three days; a glandular enlargement at the back of the neck was also observed.

On the 12th, there were seen upon the surface of the body, and especially on both sides of the thorax and about the hypochondriac regions, spots of an irregular shape and pink colour, unaccompanied by any feeling of illness. The glandular enlargement in the neck had become more marked. The erythema, more extensive and more confluent on the following days, left no doubt as to its syphilitic nature. No fever, no catarrhal phenomena, no heat or itching of the skin, nothing, in short, accompanied this maculated erythema, which went on increasing for a week.

On the 20th, the cervical glands and the sub-epitrochlean glands had gained in size and resistance, and the chancre was still in the same state, without showing any tendency to cicatrise.

On the 22nd, the erythema was absolutely copper-coloured and studded with lenticular papules. The primary chancre was beginning to heal and a mercurial treatment was adopted.

It is to be remarked that, in these different cases, the lesion which served for the inoculation belonged to the secondary period; experiments performed by Diday with blood taken from individuals affected with tertiary symptoms have always given a negative result,* and that author thinks that at the period of those symptoms the blood has ceased to be inoculable, and I willingly join in his belief that the contagiousity of the blood lasts no longer than that of the secondary symptoms of syphilis.

Some experiments by Melchior Robert would seem to show that

* *Gaz. de Paris*, 1849.

the blood does not yet possess any contagious property at the commencement of the period of local eruption (primary lesion), if there were not good reasons for believing that that syphilographer had confounded true and false syphilis. He remarked, in fact, that the blood taken from a wound made in the excision of chancres, whether simple or indurated, is not inoculable from one patient to another during the first three days which follow the excision, but only as soon as suppuration has become established on the surface of the wounds, that is to say, about the fourth day.

To sum up, the blood may be contagious during the continuance of the primary lesion, and is no longer so during the tertiary period. It is so certainly during the secondary period, and, in our opinion, Dr. Viennois is right in asserting that that fluid may serve for the transmission of the syphilitic poison in vaccination. But vaccination is not the only mode of syphilitic contagion by the blood. If it be true that an infected mother is capable, in the course of pregnancy, of communicating the disease to her child, or that the latter may infect its mother while still in the womb, it must be admitted that the blood is the only means of communication between the two individuals, unless we assume, which is very improbable, that secondary lesions have developed themselves in the interior of the womb.

Transmission of syphilis to the fœtus by a mother infected after the moment of conception.—Eleven cases collected by Diday,* for the purpose of showing that syphilis is transmissible from the mother to the fœtus, when it is contracted after the fourth week and before the seventh month of pregnancy, have not appeared to us to be very clear and positive. It is not proved, in fact, that the child infected at the moment of its birth or soon after it, was not infected by the father, who had not infected the mother until after conception, and doubt on this point is at the very least justified by observations due to Starck, Depaul, Bertin, and several other authors. Moreover, the infection of the child is not always certain: such is a case of Bertin's, in which the child presented no other lesions than ulcerated pustules on the buttocks; such again is Baumès' case, in which the child, which recovered, presented pustules of syphilitic ecthyma (a lesion difficult to specify) upon the buttocks, on the chest, and on

* Diday, *Traité de la syphilis des nouveau-nés et des enfants à la mamelle*. Paris, 1854, p. 45.

the cheeks. The case observed by Diday himself is not more conclusive; it was that of a woman who took by contagion mucous tubercles of the throat, and who afterwards presented most distinct signs of constitutional syphilis; the infection occurred at the commencement of the seventh month of pregnancy. But mucous tubercles are not the primary lesion. How far back, then, did the latter date? Was it not previous to the pregnancy? or did it occur after conception? There was nothing to determine this. Like Diday, Trousseau believes in the transmission of syphilis under similar circumstances, and quotes a case in support of his opinion.* Putegnat also takes this view. Despite these imposing authorities, we believe that facts do not yet sufficiently prove the contagiousity of syphilis under such circumstances. Moreover, Natalis Guillot and Boys de Loury have seen women affected, at the time of delivery, with primary lesions contracted during the latter period of pregnancy give birth to children in whom no trace of syphilis manifested itself. Mandon, of Limoges, writes that "syphilis contracted by the mother during her pregnancy is not transmissible to the fœtus."† That author, it is true, is content to deny without bringing forward any proofs; but the same does not apply to Baerensprung, who declares that a mother contaminated during pregnancy does not infect her infant. That author bases his assertion upon fourteen cases in which syphilis, contracted at all periods of gestation, even in the fifth and sixth month, was not transmitted, since the children were in good health eight and ten weeks after birth. Such is the state of the question in reference to the contamination of the fœtus by a mother infected in the course of pregnancy. This cannot yet, in our opinion, be definitely settled; we must avoid drawing too hasty a conclusion. A case which presented itself to our notice gives the measure of this difficulty. A young woman of 18 was infected two months after conception and delivered at the eighth month of a still-born child, which presented no trace of change. Could this child be regarded as syphilitic? The proofs are evidently wanting, and this case cannot lead to any really scientific result.

Transmission of syphilis from the fœtus to the mother.—High

* *Clinique médicale*, t. ii. p. 669. Paris, 1862.

† *La mère peut-elle transmettre au fœtus la diathèse acquise pendant sa grossesse?* (*Journal de médecine de Bruxelles*, Jan. and Feb., 1856, p. 116, et *Gaz. hebdomadaire*, 1856).

medical authorities agree in admitting this form of contagion. "The husband," says Ricord, "may beget an infected child which shall propagate the secondary virus to the mother."* Depaul † writes :—"The mother being undoubtedly healthy and the syphilis having been transmissible by the father alone, and that only at the moment of conception, the embryo, alone diseased for some time, may in its turn, during its sojourn in the womb, infect its mother." According to Bazin, ‡ the fœtus to which syphilis has been transmitted by its father, may infect its mother during intrauterine life, and the lesions which develop themselves in her are then very communicable. S. Cooper, Maisonneuve and Montanier, Hutchinson, § and Balfour || are of the same opinion, which is also shared by Lafont-Gouzy ¶ and Putegnat de Lunéville, ** and supported by the observations of Semanas †† and Diday. The cases of this kind may be grouped under two heads. In the one set, those of Semanas, Bazin, ‡‡ Beyran, §§ and some of Diday's, it is a question of secondary manifestations supervening several weeks or several months after delivery ; in the other, the syphilis showed itself in the course of the pregnancy. The objection to which all the first set of cases is liable is, that the contamination may have taken place at the time of delivery ; the objection to the second set is, that gestation was the occasional and not the efficient cause of the syphilis, the primary lesion having passed unperceived, as happened, indeed, in Observation IV. of Rollet's report. |||| The same objection also applies to the three observations of Dr. Balfour, in which the same syphilitic lesions were observed to reappear in several successive pregnancies. Later on, when we shall point out the influence of pregnancy upon secondary syphilitic eruptions, it will be easier to judge of the

* Diday, *Syphilis des nouveau-nés*, p. 243.

† Depaul, *Mémoire lu à l'Académie de Médecine*, April 9th, 1851. (*Bulletins de l'Académie*.)

‡ *Leçons sur les syphilides*, 1859, p. 45.

§ *Med. Times and Gaz.*, 1856 ; and *Gaz. méd.*, 1857, p. 646.

|| *Edinburgh Med. Journ.*, 1856 ; and *Gaz. méd.*, 1857, p. 754.

¶ Lafont-Gouzy, *Journ. de méd. de Toulouse*, April and May, 1854.

** Putegnat, *Hist. et thérap. de la syph. des nouveau-nés*, 1854, p. 114.

†† Semanas, *Gaz. méd. de Paris*, 1849, p. 777.

‡‡ Diday, *loc. cit.* ; et *Exposit. des nouv. doctr. sur la syphilis*, p. 466.

§§ Beyran, *Transmission de la syphilis du père au fœtus et du fœtus à la mère* (*Union méd.*, 1862, t. ii. p. 457).

|||| Rollet, *Recherches sur la syphilis*, 1861, p. 180.

reserve necessary on such a subject. As yet, therefore, we cannot admit as certain the infection of the mother by the fœtus.

The milk.—Vernois and Becquerel, in some interesting researches into the composition of the milk of women in a state of health and in a state of disease, have ascertained that in the milk of syphilitic women the butter is greatly diminished in quantity, while the salts are increased out of proportion and the specific gravity attains an extraordinary height. Although this fluid, when examined under the microscope, does not present anything peculiar, we cannot help asking ourselves whether it may not be contagious. Stahl and most of the syphilographers of the last centuries suspected syphilitic infection by the milk. Cataneus,* Paracelsus, Ambrose Paré,† and many others, firmly believed in it. Astruc, Fabre, Doublet, Bell, Mahon, Bertin, and Cooke were of the same opinion. This opinion was professed more recently by Lane, Parker, Putegnat de Lunéville,‡ Melchior Robert, and Ricordi, of Milan. But Hunter, Swediaur, and Nisbett deny this mode of communication, which Barbantini, Dugès,§ Venot, N. Guillot, Ricord, and Nonat are unwilling to place in the list of infecting causes.

Two opposite opinions are here confronted with each other; assertions are not wanting, but few facts are brought forward in proof of them. In our opinion, infection by the milk, as it was understood by the ancients, cannot be admitted, since everything leads us to see in the observations quoted in support of this doctrine, contamination by the secondary lesions developed in the breasts of the nurses and remaining unobserved. Must we accept with more confidence the observations of the moderns? Melchior Robert gives as perfectly conclusive two cases of which the following is an abstract; but they are far from satisfying a strict observer:—

A nursing mother, free from all venereal disease, was suckling a healthy

* Lac enim quum ex sanguine generatur, malam sapit qualitatem in sanguine præexistentem.

† Infants suckled by syphilitic nurses are infected by them, seeing that the milk is nothing but whitened blood, which being infected by the virus, the child fed with it imbibes the same qualities, &c. (*Œuvres complètes*. Lyons, 1652.)

‡ Putegnat, *Hist. et thérap. de la syphilis des nouveau-nés*. Paris, 1854, p. 102.

§ *De l'innocuité du lait des nourrices atteintes de syphilis pour les enfants qu'elles nourrissent*. Thèse de Paris, 1852, No. 37.

child, when she had connection with her husband, who had contracted syphilis a month before. Six weeks later, confluent spots appeared upon the body of the child, and the same spots upon the body of the mother, accompanied also, in her case, by cephalalgia. The nipples and mouth were healthy; the child had neither sores, nor cicatrices, nor enlarged glands.

D. entrusted her child to a young, fresh-looking nurse, who lost her hair and was covered with pimples on the arms and hands. But the nipple, which was carefully examined by D., did not present any lesion. Two months later this nurse was sent away, and, fifteen or twenty days after, the child had six moist pimples about the anus, which were nothing else than mucous patches; it had, further, spots upon the body, but no ulceration or cicatrix of the mouth, and no glandular enlargements in the groins or neck.

Before accepting these cases fully, it would have been necessary for them to have been followed out more exactly. Who does not see that it was impossible to watch these two children with sufficient care, and also that they were observed at much too advanced a period of the infection?

In support of the opposite opinion, Cullerier read, in 1850, at the Academy of Medicine,* five observations of nurses infected with syphilis whose nurslings continued healthy; but these cases also leave something to be desired, inasmuch as it is not proved that these children, despite their good looks, were not syphilitic.

Dugès relates that a woman affected with a tubercular syphilide suckled for nearly five months, at the same time that she was under treatment with proto-iodide of mercury, a child which presented no trace of syphilitic lesion, but which was merely very weak. This case is not perfectly conclusive, and moreover it stands alone. It does not, however, deserve the reproach addressed to it by Diday, viz., that the child sucked, at one and the same time, both the poison and the remedy, for mercury, as we shall see further on, does not in any way prevent the lesions of syphilis.

Such are the facts. The conclusion to be drawn from them is, that hitherto the absolute innocuity of the milk of an infected mother for a healthy child has not been clearly proved. Thus, it is not prudent to allow a child to be suckled by a syphilitic nurse if we wish to insure it against all danger.

* Cullerier, *Bulletins de l'Académie de Médecine*, 1850; et *Gaz. méd. de Paris*, même année, p. 892.

The semen.—The old syphilographers attributed a virulent quality to the seminal fluid of syphilitic subjects. But since Hunter's time, the spermatic fluid, like all the products of physiological secretion, has ceased to be regarded as contagious. However, in a report published in 1857, Porter * asserts that the semen of an infected man may, without the intervention of pregnancy, develop in a healthy woman an infection exclusive of any kind of primary lesion. Amongst the four cases which serve to support this proposition, two are anything but conclusive; but the other two deserve to be given, on account of the difficulty of the subject and its importance. They are :—

A man married, believing himself to be perfectly cured of syphilis; eight months after, his wife had constitutional symptoms, without any trace of primary lesion and without being pregnant. The husband had never presented any fresh symptom.

A man had syphilis three months before marriage; he had both primary and secondary lesions. He was treated with mercury and iodide of potassium. At the time of his marriage he had no symptoms of syphilis. Eight months after, his wife had syphilitic angina with ulceration, enlargement of the tonsils and glands, but nothing in the genital organs; later on, she had exostosis.

Professor Collet, adds Porter in his report, has had very similar cases. Langston Parker † also relates three cases of syphilitic infection which he believes to be attributable to the semen. The three infected husbands were free from all symptoms. There was neither pregnancy nor trace of primary lesion in the women. I will not insist upon the objections which might be made to these cases. Those which present themselves at once to the mind are the following :—Is it certain that the asserted infecting husband had not, after his marriage, some manifestation which passed unobserved? Was it really the semen which was the agent of the transmission? Can we believe that no one else had connection with the women? All these points are not stated with sufficient clearness, and deserved to be so that they might bear conviction with them. One of our most dis-

* Porter, *Essay on the hist. of syphilis* (Dublin Quarterly Journal, May, 1857; Gaz. méd., 1858, p. 663). Compare: Vidal, *Traité des maladies vénér.*, 1855, p. 75.

† Langston Parker, *On latent syphilis and its effects on healthy females and on the fetus in utero* (Medical Times and Gazette, July 4th, 1863, p. 6).

tinguished syphilographers, Diday, gives the following explanation of the contagion supervening in such cases. "The semen," he says, "may infect directly, and the spermatozoon, which is the agent for the transport of the virulent matter, penetrating as far as the ovary, has sufficient power to infect the ovum and the organism of the mother to whom it belongs."* I do not know whether any cases were quoted in support of this communication made to the Congress at Lyons; but, in my opinion, the question of contagion by the semen requires elucidation by the aid of fresh facts before we can either accept this mode of contagion or reject it definitely.

Saliva, perspiration, tears.—Like the milk, the saliva by no means escaped suspicion with the earlier syphilographers, and even those of the present day still believe that this product of secretion may serve for the transmission of syphilis. It is very evident that saliva coming from a mouth in which there are mucous patches must be infectious; but apart from this condition, does the saliva transmit syphilis? There is no reason to believe it, after the communication made by Diday to the Congress at Lyons, that experimenter having been able to inoculate with impunity, in healthy individuals, saliva which he had taken from syphilitic subjects.

The tears, and doubtless also the perspiration, do not behave differently, for inoculation with them has not been more successful. Let us confess that these failures give little encouragement to the belief in the contagiousity of the milk, which is, like the fluids of which we have just been speaking, a product of physiological secretion.

MODES OF CONTAGION.

In the following phrase, Paracelsus clearly pointed out the various modes of syphilitic contagion: "Infectio triplici via, videlicet coitu, partu, tactu."†

Sexual intercourse.—From the period of the great epidemic of the fifteenth century, it has been recognised that sexual intercourse between healthy and diseased persons is one of the most frequent modes of syphilitic contagion. In 1497, A. Benedictus ‡ proved

* See *Gaz. hebdomadaire*, 1864, p. 706; et *Gaz. méd. de Lyon*, February 1st, 1865, p. 50.

† *De var. lib. v. c. 1.*

‡ Novam in mundo pestem, tempestate nostra, concubitu et contactu haberi animadvertimus.

it. In 1498, Aquilanus* showed himself not less positive on this point. In 1505, J. Cataneus remarked that coitus was the chief cause of the disease, and thence the denomination of *lues venerea* which was afterwards given to it. Daily experience has only too thoroughly confirmed since then the truth of the observations of the earlier syphilographers, and the fact is so common that we need not further insist upon it. I will not dwell upon the contamination which may follow, to use an expression of Astruc's, from the abominable and unnatural intercourse of persons of the same sex.

But contagion from sexual intercourse is possible without either of the parties being diseased. This fact, which did not escape the first syphilographers, has since been studied with care.

"There may be a fourth cause of contagion, writes Cataneus,† viz., coitus with a healthy woman who, after having recently had connection with an infected man, has retained in her vagina some of his seminal fluid." Widemann,‡ Thierry de Héry, Fernel,§ Ambrose Paré, &c., admitted the possibility of this mode of transmission, which is also found mentioned in formal terms by G. Vella:|| "I have known healthy women who have had connection with infected men, and who, not having contracted this kind of disease, have nevertheless transmitted it, to other men who had intercourse with them." "Some women," says Nicolas de Blégny,¶ "who have been found to be healthy, have not failed to contaminate men with whom they have had connection," &c.

Astruc, Fabre, and Swediaur also admit mediate contagion. "It is believed," says Astruc,** "that a healthy man may contract syphilis

* Nam fere omnes qui hanc ægritudinem passi sunt, aut illam per coitum vel lac sugendo contraxerunt, aut aliquo alio contagioso modo (*Aphrodisiacus* de Gruner, p. 63).

† Quarta causa poterit esse coitus cum sana cum quæ de proximis coiverit infectus semine adhuc in matrice existente.

‡ All connection with a healthy woman who has had connection a short time before with a diseased man must be avoided. Under these latter circumstances, experience has shown that there is danger of contagion for the man who succeeds the infected paramour.

§ Fernel, *De lues venereæ curatione*, c. iv.

|| Novi mulieres sanas quæ coiverunt cum infectis, in quas tale genus ægritudinis non transivit, et tamen transivit in viros alios coeuntes cum illis.

¶ Nicolas de Blégny, *L'Art de guérir les malad. vénér.*, ch. vi.

** *Loc. cit.* t. ii. p. 16.

from a healthy woman, if this woman, after having had connection a short time before with a diseased man, allows the other to approach her without having first washed herself." "A person," asserts Swediaur,* "whether man or woman, who has syphilitic poison lodged in the genitals, may infect another person and communicate a gonorrhœa or a syphilitic ulcer, without having the least appearance of disease, either externally or in the system." The theory follows.

In our own days, Cullerier has relied upon facts well observed and altogether demonstrative of these views of the earlier writers. Ricord relates † a case in which the man and not the woman was the agent of the transmission. A young man had connection with a woman who had chancre; the same day, he had connection with his usual mistress, who was infected with the same disease, without his having contracted it. It is to be remarked that this young man had not washed himself after the first connection, and that his prepuce was very long. Thus, *à fortiori*, it cannot be denied that women, after having had connection with diseased men, may, by serving as a vehicle, have been capable of transmitting a disease which they themselves did not contract.

Kisses and other modes of contact.—Torella mentions the transmission of syphilis by kisses. He attributes the origin of it to lesions of the breasts, the face, or the mouth, whether of a nurse or of some other person. For nurses are accustomed to kiss little children frequently.‡ Fernel also speaks of this mode of contagion in reference to which Benedictus Victorius wrote in 1581:—"I know a young man in perfect health who was in the habit of kissing a woman long affected with syphilis; he contracted this disease without ever having had any other relations with her."||

Almenar, Brassavole, Fallopius, Léonard Botal, Bernard Tomitanus, A Paré, Trajan Petronius, Nicolas de Blégnny, Astruc, Fabre, and many other syphilographers, have not forgotten to mention this

* *Loc. cit.* t. ii. p. 98. Paris, 1801.

† *Traité des maladies vénériennes*, p. 98.

‡ Et hoc accidit propter mammas infectas, aut faciem, aut os nutricis seu alicujus alterius. Solent enim nutrices sæpius infantes osculari.

§ Ego enim experientia edoctus fui juvenem inculpabili sanitate munitum, longo quodam temporis intervallo mulierem gallico morbo depravatam, ore exosculare assuetum, nullo per jovem exercitato coitu, in morbum gallicum incidisse (*De morbo gallico*, lib. i. cap. ii.).

kind of contamination. In reference to this subject, Charles Musitan relates the history of the nuns of Sorrento who contracted syphilis from kissing a little girl who had been suckled by a syphilitic woman.* A great number of cases of this kind have been collected by Rollet.† What I have said suffices, I think, to place beyond doubt the mode of transmission in question. The circumstance of lying with an infected person has also been regarded as a cause of contagion by several syphilographers, amongst whom are Paracelsus and Fernel. Guillaume Rondelet wrote on this subject: "Others contract the disease by lying with persons who are infected, when it shows itself on the whole skin, chiefly at the points where the contact took place."‡ A. Frier and N. de Bligny § recognise this mode of contagion. "To lie with a syphilitic," says the latter, "and to come into direct contact with him while he is sweating, or when he has ulcers or pustules on the skin, is a thing which may be regarded as dangerous, especially for those whose pores are open." Swediaur relates the following case:—Two young girls born of healthy parents, the one aged 12, the other 10, had both of them ulcers and herpetic eruptions (*dartres*) upon various parts of the body without any disease on the genital organs. These two young girls, who had never had any venereal affection, sometimes slept with a woman-servant who was known to have an unequivocal eruption and a *corona veneris*. Sydenham remarks that he several times observed that children who lay in the same bed with their infected parents also became diseased. For my own part I saw in 1858, in the practice of M. Rayer, whose house-surgeon I then was, a young woman affected with a papular syphilide, who recovered in a few days by taking Sédillot's pills. This girl affirmed that she had never had sexual intercourse, which was true. When questioned as to the origin of her disease, she stated that she had slept for several weeks with a friend who had a syphilitic eruption.

A lady once showed me a son of hers 6 years of age, whose skin was covered with a confluent papular syphilide, and who had mucous patches in the mouth. The child had contracted the disease

* *Tract. de lue venerea*, lib. ii. cap. iv.

† Rollet, *Recherches sur la syphilis*.

‡ Alii cum ægrotis dormiendo hanc luem contrahunt et tunc in cute tota apparet et præsertim in ea parte qua ægrotum tetigerunt (*Aphrodisiacus*, p. 935).

§ Nicolas de Bligny, *loc. cit.* p. 16.

when at nurse. In spite of my repeated warnings, this mother continued to kiss her son, and sometimes had him to sleep by her side. Three or four months after, she came to me and showed me a most characteristic papular eruption, which soon became modified under the influence of mercurial pills. She had not observed any pimples on the mouth or face. (See Obs. II. Vol. I. p. 94.)

Simple contact, consequently, suffices for the contamination, and the latter may take place, no matter in what manner the former occurred. Thus Vercelloni states that he knew a young man who, being afraid to have connection with a syphilitic courtesan, thought that he might safely touch her, and whose hand became diseased. Side by side with cases of this nature there are others much more regrettable, and with which it is important to be acquainted, as they teach us the danger of certain professions, and especially of our own. Ant. Lecoq states that he knew a midwife who contracted the disease by sleeping with a syphilitic woman.* Fernel† and Prosper Borgeat each quote a similar case. The French translator of Ch. de Musitan relates, according to Astruc, two similar histories. Since then, such cases have been frequent and are now very numerous. It is evident that the physician is, in such cases, quite as much exposed as the midwife, and is more so in all the operations he has to perform on syphilitic subjects. The history of Hourmann is too well known for it to be necessary for us to allude to it further. Not long ago, one of our surgical celebrities contracted a chancre on one of his fingers in the practice of his profession.

Suckling.—G. Torella, of Valence, was the first to point out the transmission of syphilis by suckling. In 1498, Seb. Aquilanus, of Mantua, wrote that most of the cases of syphilis are due to coitus or to suckling. J. Cataneus states :—"We have seen several children affected with this disease infect their nurses."‡ G. Vella confirms the clinical observations of his predecessors in reference to this mode of transmission, but incriminates rather the quality of the milk than the act of suckling. In a sacred ode addressed by G. Reitterius to the holy Virgin to beg her to preserve the human race from syphilis,

* Equidem obstetricem novi quæ dum mulieris inquinatæ partum exciperet, hoc morbo correpta fuit nulla tamen fœtus noxa communicata. (*Lib. de ligno sancto non permiscendo*, cap. i.)

† *Aphrodis.* p. 610.

‡ Hoc etiam modo vidimus plures infantulos lactantes tali morbo infectos plures nutrices infecisse.

it is said : "The child which, in early life, draws its nourishment from the breast of a nurse is no longer in safety.

Non puer tutus teneris in annis
Quem suæ lactat genetricis uber.

Benedictus, J. Almenar, Fracastor, and N. Massa mention syphilitic contagion from suckling. Paracelsus, A. Ferri, and Ant. Lecoq also speak of this mode of communication, of which, in 1650, A. M. Brassavole relates a very good instance,* at the same time as he points out the means of knowing which of the two, the nurse or the nursling, has infected the other. J. B. Montanus and A. Ferrier confirm the preceding data. J. Rodrigue, better known by the name of Amatus Lusitanus, describes a slight epidemic which had for its origin a syphilitic new-born child. This child transmitted the disease to its nurse, who communicated it to her husband and neighbours.

G. Fallopius, Fernel, and G. Rondelet also admit contagion by suckling. Agreeing therein with Brassavole, the latter points out that syphilis, in infected nurses, commences with ulcers on the breasts. Often also, says A. Paré, a child which has syphilis gives it to the nurse, and in reference to this he relates in his quaint and original style the following case :—"A rich and respectable woman begged her husband to permit her to nurse her child herself, which he did on condition of her taking another nurse to assist her in suckling the child. This nurse had syphilis, which she gave to the child, the child to its mother, the mother to her husband, and the husband to two little children who usually eat and drank and frequently slept with him. But the mother, thinking the child did not get on well, and was always crying, sent for me to tell her what was the matter with it, which it was not difficult to do, seeing that it was covered all over with pimples or pustules, and that the breasts of the nurse were ulcerated; also those of the mother, who had upon her body several pimples; also the father and the two little children, of which one was 3, and the other 4 years old. I told the father and mother, that they were all affected with syphilis, which had proceeded from the nurse. I treated them and they all got well, except the youngest child, and the nurse was flogged in prison, and would have

* See this case in *Aphrodisiacus*, p. 668.

been flogged in the public streets, had it not been for fear of dishonouring the family."

For this father of French surgery there are two modes of transmission of syphilis by suckling, the sucking of the milk alone, and direct contact between nurse and nursling. Bern. Tomitanus also makes known the modes of infection of nurses by their nurslings. Léonard Botal, A. Fracanziani, A. Trajan Petronius, P. Borgarutius,* N. de Blégny,† Boerhaave, Astruc, Van Swieten, and lastly Fabre, are all agreed on the point that syphilis may be contracted by suckling. I have thought it necessary to expound at length the ancient doctrine on this important point, for the purpose of showing how the truth may all at once give place to error when the opinion of a single individual comes to be substituted for the truths acquired by tradition.

Hunter, seeking to apply experiment to the study of syphilis, had a happy conception, but one which was destined, at the very first, to bear bad fruit. Forgetting the history of the past, and relying upon artificial inoculation, of which he did not justly appreciate the value, he denied the contagiousity of secondary lesions and the transmission of syphilis by suckling. And yet the clinical fact did not escape his notice; if his imagination or his system thrust it aside, his spirit of observation restored it to the right track. In fact, he relates in his treatise two cases of the greatest interest, in which children affected with hereditary syphilis became the cause of the infection of nurses and nurslings.

Despite the ingenious experiments of Hunter, the dogma of the transmission of syphilis by suckling none the less continued to be professed by many observers. Thus Babington, B. Bell, and Bosquillon opposed the doctrine of the English surgeon, who found partisans, however, in Girtanner, Barbantini, Vacca Berlinghieri, Monteggia, Pressavius, Rosen de Rosenstein, and Paletta; but Doublet, Swediaur, Bertrandi, Ploucquet, Mahon, Vassal, Bertin, Bourgogne, Lagneau, Petit-Radel, Colles, Baumès, Egan, Viani, Pietrini, Bertherand, and many others, agreeing with tradition, sought to refute the opinions of the celebrated syphilographer.

The supporters of Hunter were few in number, then, when Ricord,

* For bibliographical indications, see Luisinus, *Aphrodisiacus*, &c.; and Ricordi, *Sifilide da allattamento*. Milan, 1865.

† *L'Art de guérir les malad. vénér.*, 1674.

the great and warm partisan of the Hunterian theory, appeared in the field. Relying, like his predecessor, upon the results of inoculation, he fell into the same error. One of his chief pupils, Diday, did not fully accept the theory of his master. "It remains established," he wrote as early as 1854, "that the contact of the mouth of a nursling with the breast of a syphilitic nurse ought to be carefully avoided." Since that time, he has shown himself a decided partisan of the opposite doctrine, which Bardinet, Putegnat, Bouchut,* Valery, Rollet, Ricordi, of Milan, &c., have now rendered unattackable.

The nurse or the nursling may be the agent for the transmission of syphilis. The nurse when, under the influence of primary or secondary syphilis, she suckles a healthy child; or if, as may be supposed, the milk is not contagious, it is on condition only that a syphilitic lesion becomes developed, and this is what most frequently happens, or because a chancre has been carried to the breast of the nurse by a stranger who has practised *suction*, of which we find numerous instances in science,† or again because there has been contact of another kind, direct or indirect,‡ or again, as was observed by Bertin, because an infected child has deposited upon the breast of its nurse the virulent matter which shall have served to infect another nursling (mediate contagion). But after all, the most frequent cause of contamination for the nurse is the presence of mucous

* Bouchut, *Transmission de la syphilis des nouveau-nés aux nourrices* (*Gaz. méd. de Paris*, 1850). Compare: Candelon, *Modes de la transmission de la syphilis chez les nouveau-nés*. Thèse de Paris, 1852.

† Epidemics of syphilis have been seen to supervene in consequence of this process. Consult on this subject: A. Everard, *Collatio antiqui morbi recrudesc. cum gallico vel indico morb.* Mediol., 1661. Albert, *Dissertat. de osculo morbifico et morbifero*. Halle, 1726. E. Barry, *Account of a malignant lues venerea communicated by suction in the City of Cork*. Edinburgh, 1728; and *Medical Essays and Observ.*, t. iii. No. 21, p. 323 et seq. We find here an interesting case given also by Van Swieten, *Comment. in H. Boerhaavii Aphorism.*, t. v. p. 348. Ploncquet, *Initia bibliothecæ medico-practicæ et chirurgicæ*. Tübingen, 1803. Jacob Munniks, *Observationes variae*; diss. inaug. Groningæ, 1805; et *Journ. gén. de méd. de chirurg. et de pharm.*, 1805, t. xxiv. p. 537; *Histoire d'une maladie syphilitique propagée par une femme qui faisait métier de têter les nouvelles accouchées et qui a régné à Groningue en 1804*. Bourgogne, *Considerat. générales sur la contagion de la maladie vénérienne des enfants trouvés à leurs nourrices*. Lille, 1825.

‡ See Ricord, *Lettres sur la syphilis*, pp. 166, 167, 2^e édit.

patches which, under the influence of sucking, soon develop themselves on the surface or in the neighbourhood of the nipple.

The nursling is, nevertheless, the most usual agent of transmission. The syphilis which it communicates may proceed from three sources. It is hereditary, which is the most frequent case; or it has been contracted by suckling from a strange nurse; or it results from some contact direct or indirect. If the contact is direct or immediate, it is, in general, a foster-child which transmits the disease; in other cases utensils of all kinds, especially linen, or vaccination, may be so many causes capable of developing syphilis in children.

These different modes, into the details of which we cannot enter, are easy to understand; but it is important to accustom ourselves to foresee the possibility of them. Neither should it be forgotten that under such circumstances, true epidemics of syphilis have been seen to appear.

We have already made known such of these epidemics as the earlier authors have left an account of. We now give a succinct history of those which have been observed more recently. Portal relates that a kind of scrofulous epidemic prevailed at Montmorency amongst the children at nurse. The evil became so great there that the Government sent Morand and Lassonne, who ascertained that most of the nurses were syphilitic.* In March, 1844, Petrini treated an illegitimate child, born of a syphilitic mother: this child infected two nurses, who communicated the disease to their husbands and to their two children.†

A case which gave rise to a greater extension of syphilis was observed by Dr. Jolly.‡ Dr. Facen gives another not less curious.§ In his excellent work on syphilis from suckling, Ricordi || has furnished observations not less curious and interesting. In 1863, at Cazorezze, a foundling, affected with syphilis, caused the infection of twenty-three individuals. In the same year, at Ubolda, a foundling, equally suffering from hereditary syphilis, transmitted the disease to eighteen individuals. A third epidemic, developed under similar circumstances, prevailed in 1864 at Marcalle, where it proved fatal

* Lugol, *Des maladies scrofulenses*. Paris, 1844, p. 120.

† *Il raccogliatore medico*, July number, 1850.

‡ See *Journ. méd chir. et pharm. de Bruzelles*, 1853, p. 92.

§ *Gaz. med. Lombard.*, No. 1, May, 1849.

|| Ricordi, *Sifilide da allattamento*. Milan, 1865.

in sixteen cases. It would be easy to collect a greater number of facts of this kind, but the preceding are sufficient, we think, to render intelligible the necessity of a medical police for the purpose of preventing similar disasters.

In closing this part of the subject, I must point out, and this is a circumstance which is not devoid of a certain practical importance, that a nursling which has inherited syphilis does not infect its mother any more than the latter infects her nursling. This is again the consequence of the law that syphilis does not become doubled. Colles,* in 1837, gives as a constant rule that a new-born child affected with congenital syphilis never produces ulcerations on the breasts of its mother, even when it has ulcers in its mouth, while it is capable, under the same circumstances, of infecting a strange nurse. Baumès,† in 1840, made the same observation, which was afterwards confirmed by the researches of Egan ‡ and by those of Cullerier.§

Vaccination.—Destined to preserve us from one of the most serious diseases, vaccination may also be a mode of contagion of syphilis, in which the virus is no longer transmitted by immediate contact, but by the medium of some object; the contagion is then called mediate. Suspected to a certain extent by Leroy,|| this danger from vaccination appears to have been first pointed out in England,¶ and afterwards in Italy by Monteggia** and Marcolini.†† The latter observed a kind of epidemic analogous to that of which we have already spoken in reference to the transmission of syphilis by suckling. A little girl born of syphilitic parents served for the vaccination of ten children, June 16th, 1814; on the 30th of the

* *On the venereal disease*, 1837, p. 385.

† *Précis théorique et pratique des malad. vénér.*, p. 180.

‡ *The Dublin Quarterly Journal*, May, 1846.

§ *Des symptômes consécutifs de la syphilis, considérés dans leurs rapports avec l'allaitement. Bulletin général de thérapeutique*, 1850, p. 559.

|| *La clef du cabinet des princes*, an. x. Obs. XI. and XII.

¶ Consult: B. Moseley, *A treatise on the Lues bovilla or Cow-pox*. London, 1805. Depping, *La vaccine combattue dans le pays où elle a pris naissance*. Paris, 1807. W. Rowly, *Commentaries on the Lues bovilla or Cow-pox*. London, 1806.

** Monteggia, *Mémoire lu, le 17 Février, 1814, à l'Institut de Milan*. See *Annali universali di medicina*, di Annibale Omodei. Milano, 1824.

†† *Ibid.*

same month, thirty others were vaccinated, making forty in all; of these several died of confirmed syphilis; some of the children had both syphilis and cow-pox. In a case observed by the same author in 1822, a child healthy in appearance, but afterwards recognised as syphilitic, served by means of the same process for the transmission of syphilis to a little girl.

In 1821, a little girl, healthy in appearance, and in whom vaccination ran its usual course, served for the vaccination of forty-six children; nearly all of them were infected and nineteen died. Most of their nurses and mothers contracted syphilis by suckling.*

In 1841, a child in the neighbourhood of Cremona, born of syphilitic parents, furnished lymph for sixty-four children, and most of these children had symptoms of general syphilis. Neither were the mothers or nurses spared. Of the sixty-four vaccinated, fifty-four recovered, and eight children and two women died; the child which caused the infection finally died dropsical, after having presented various eruptions on the skin and syphilitic ulcers on the genital organs and scrotum.† Pitton, in 1844,‡ and Ceccaldi§ in 1845, also observed cases of transmission of syphilis by vaccination; but these cases may leave matter for doubt, and we are inclined to ask ourselves, after reading them, whether syphilis was the efficient cause or simply the occasion of the development of the syphilis in the new-born child. A more positive case is related by Viani. A child which had already infected four nurses, one of whom communicated syphilis to another nursling, served for the revaccination of its uncle and aunt, whom it also infected. The vaccinator, Dr. Viani himself, was ignorant of the child's antecedents.||

Cases little different and in which there is every reason to assume the transmission of syphilis by vaccination, are also given by Mounell and other observers.¶ Since that time the attention of the

* Cerioli, *Del contagio venereo*, &c., 1821; and *Annal. univ. de medicina di Omodei*, t. xix.; *Revue méd.*, t. iii. p. 51.

† Cerioli, in *Gazzetta medica di Milano*, October 14th, 1843, t. ii. No. 4.

‡ *Journ. des connaissances med. chir.*, 1844.

§ *Revue méd. chirurg.* Paris, 1853, t. xiii. p. 121.

|| *Gazzetta medica Lombarda*, 1849; et *Gaz. méd. de Paris*, 1849, p. 847.

¶ *New York Med. Times*, 1854. James Whitehead, *Third Report on the Clinical Hospital*. Manchester, 1859. J. Lecoq, *Gaz. des hôpitaux*, 1859, p. 508; et Guyenot, *De l'inoculation de la syph. const.* Thèse de Paris 1859.

medical world has been directed to this mode of transmission, to which two actions brought in Germany, one against veterinary-surgeon B——, the other against Dr. Hubner, suddenly gave great publicity.

Ten families were revaccinated, and in consequence of the operation nineteen persons out of twenty-four contracted syphilis. The veterinary-surgeon B——, the author of these revaccinations, was proceeded against and condemned to two years' imprisonment and a fine of fifty dollars.* On the 16th of June, 1852, thirteen children of one village were vaccinated on the same day and with the same lymph, which was taken from a child said to be syphilitic; ulcers soon developed themselves at the points of vaccination in eight of them, and about three months later syphilitic eruptions appeared; no abnormal symptom was observed in the five others.†

In spite of these numerous and much to be regretted facts, the possibility of the transmission of syphilis by vaccination was not yet generally admitted when the interesting work of Dr. Viennois, of Lyons, appeared in 1860.‡ After having examined the cases on record, that author came to the conclusion that it is the blood and not the virus which is the agent of the transmission of syphilis. In a paper published about the same time, Rollet§ arrived at the same conclusion. Since then, cases have been numerous. "Recently," wrote Dr. Galligo, in August, 1860,|| "there was "observed in the neighbourhood of Florence, at Rufina, the transmission of syphilis to fourteen children vaccinated with lymph taken from a child which, although apparently in perfect health, was stated to be the issue of parents who, a short time before, had been suffering from severe secondary affections."

Towards the end of May, 1861, a child at Rivalta, eleven months

* See Wegeler, *Medizinische Zeitung*, April 3rd, 1850.

† See Sée, *Gaz. hebdomadaire de médecine et de chirurgie*, March 9th, 1855. Broca, *Société de chirurgie*, t. v. Consult also: Pauli de Landau, *Ueber Contagiosität und Erblichkeit der Syphilis*, &c. Mannheim, 1859. Friedenger, *Erfahrungen über Vaccine und syph. Krankh.*, &c. Vienna, 1855. J. Heine, *Beiträge zur Lehre von der Syphilis in ihrer Verbindung mit Vaccine und diphtheritis*. Würzburg, 1854.

‡ Viennois, *De la transmission de la syphilis par la vaccination* (*Arch. gén. de méd.*, June and Sept., 1860).

§ Rollet, *Recherches sur la syphilis*. Paris et Lyon, 1861, p. 372 et suiv.

|| *Gaz. hebdomadaire de médecine et de chirurgie*, No. 31, p. 519; 1860.

old and in perfect health, was vaccinated with lymph from a tube furnished by the public officer of Acqui.* Ten days after, on the 7th of June, lymph was taken from the pustules of this child and used to vaccinate at one sitting forty-six children, who were all perfectly healthy. On the 12th of the same month, seventeen other children were vaccinated with lymph taken from one of the forty-six of the first series. The whole number of those vaccinated was thus raised to sixty-three, of which number forty-six became infected; thirty-nine out of the forty-six of the first series and seven out of the seventeen of the second series presented traces of syphilis. On the 7th of October, out of twenty-three of these children, six had died without treatment, fourteen were recovering, and three were still in danger; the twenty-three others were dispersed in various communes. Twenty mothers or nurses were infected.†

A very similar case, though rather more open to objection, has been given by Dr. Glutter. In a village of 650 inhabitants, thirty-four individuals of different ages and of both sexes were affected with syphilitic lesions of the mouth and throat after vaccination; but it was not possible to ascertain positively who had been the medium of transmission.

In 1856, at Lupara, in the kingdom of Naples, Dr. Marone vaccinated in the early part of November, a certain number of children with lymph from a tube which came from Campo-Basso, and which was coloured by a little blood, although clear and transparent as usual. One child was vaccinated first, and then served for the vaccination of the others; twenty-three of the children, including the one vaccinated first, forming nearly the whole number vaccinated, although born of parents healthy and free from any symptoms of syphilis, were attacked by that disease after being so vaccinated. The mothers of these children contracted the disease in their turns. In a second series of vaccinations, performed with

* Dr. Pacchiotti has since ascertained that this child might have contracted syphilis from a nurse. Pacchiotti, *Sifilide trasmessa per mezzo della vaccinazione in Rivalta presso Acqui*. Turin, 1862. And H. Lee, *On the inoculation of syphilis*.

† See *Gazetta medica italiana*, Nov. 4th, 1861; and *Gaz. hebd.*, 1861. Pacchiotti, *loc. cit.* Consult also Jaccoud, in *Gaz. hebd.*, 1861, Amédée Latour, Cerise, Lachèse, dans *l'Union médicale*, 1861. Venot, in *Journ. de Bordeaux*, March, 1862, p. 117. W. Acton, *Brit. Med. Journ.*, Feb. 22nd, 1862.

lymph taken from those vaccinated first, eleven other children had syphilis and, like the former, infected their mothers; these again infected eleven nurslings, and some of them communicated the disease to their husbands. Some very young girls were also infected by contact with the nurslings or with the children vaccinated.*

A case not without interest presented itself in Professor Trousseau's clinical practice, in the course of the winter session of 1861-62. A young woman of 18, who had not had any symptom of syphilis, was vaccinated with lymph taken from regular vaccination pustules. The result was almost null, which caused no surprise, as she had been vaccinated already. But a month after, two ecthymatous pustules appeared upon the arms, and soon afterwards, syphilitic roseola. In four children who had been vaccinated at the same time everything passed off normally.

Auzias Turenne has also given several cases of vaccinal syphilis.†

Chassaignac‡ presented to the Surgical Society a child in which there was no reason to suspect hereditary syphilis, and which was nevertheless affected with syphilis some time after having been vaccinated. Devergie§ and Hérard have each communicated a case of the same kind to the Academy of Medicine. Dr. Viennois|| has made known to the same society two cases observed by Dr. A. Adelasio, of Bergamo.¶ My friend Dr. Millard has given another case very recently to the Medical Society of the hospitals (*Bull. de cette Société*, 1865).

Laroyenne** Rodet, of Lyons,†† and Bouvier‡‡ have also furnished analogous cases. Such is, though still incomplete, the long series of observations which prove, at the present day, in a manner satisfactory to the majority of physicians, the transmission of syphilis by

* *L'Imparziale*, No. of March 1st, 1862, p. 142. Pacchiotti, *loc. cit.* p. 99. H. Lee, *loc. cit.* p. 76; and *Lancet*, 1862, t. i. p. 567. Consult also Stricker, in *Virchow's Archiv*, t. xxii. pp. 285-312, 1861.

† See *Courrier médical*, 1863.

‡ *Bullet. de la Soc. de chirurg.*, meeting of August 26th, 1863.

§ *Bullet. de l'Acad. de méd.* Paris, 1862-63, t. xxviii. p. 664.

|| *Ibid.* p. 1189.

¶ *Bull. de l'Acad. de méd.*, 1864-65, t. xxx. p. 20.

** *Gaz. méd. de Lyon*, June 16th, 1864.

†† *Ibid.* 1865, p. 35.

‡‡ *Bull. de l'Acad. de méd.*, meeting of February 28th, 1865. See also *Gaz. des hôpitaux*, October 22nd, 1864.

vaccination. These observations are compared with each other in the following Table:—

	Vaccinated.	Infected.	Healthy.
Cases by Cerioli . . .	46	40	6
„ „ Tassani . . .	64	46	18
„ „ Surgeon B. . .	24	19	5
„ „ Hübner . . .	13	8	5
„ „ Monell . . .	1	1	—
„ „ Marcolini . . .	40	40	—
„ „ Viani . . .	2	2	—
„ „ Lecoq . . .	2	2	—
„ „ Galligo . . .	14	14	—
„ at Rivalta . . .	63	46	17
„ by Bidard . . .	6	—	6
„ „ Mountain . . .	30	—	30
„ „ Schreier . . .	2	—	2
„ „ Trousseau . . .	5	1	4
„ „ Marone . . .	34	34	—
„ „ Devergie . . .	1	1	—
„ „ Chassaignac . . .	1	1	—
„ „ Hérard . . .	1	1	—
„ „ Adelasio . . .	2	2	—

I am well aware that negative facts exist; but these facts, supposing always that the very rational interpretation of Viennois is not always applicable to them, prove nothing in presence of the many positive facts given above. In a recent and celebrated discussion at the Academy of Medicine, opinions were divided; but at last most if not all the members ended by recognising that it was not possible to deny this mode of syphilitic contagion, which had for its advocates Depaul, Trousseau, and Bouvier. Thus nothing remains to be done at present except to find the means of preventing this contagion. Further on, we shall inquire what those means may be.

Various operations.—*Cupping, tattooing, catheterism, &c.*—Vaccination is not the only operation by means of which syphilis may be transmitted. In 1577 there was observed, as we already know, at Brünn, in Moravia, an epidemic of syphilis the origin of which was at last found out to be the cupping undergone by several persons at the hands of the bath-man of the town.* Cases of the same kind

* See Historical Notice, p. 29.

have been given by G. Horst and observed at Bamberg, in 1602, by Sigismund Snizer, at Ulm, in 1662, by Horst himself, and at Windsheim, in 1624, by Marc Widemann, in more than seventy persons. The disease in all these cases had been caused by the use of cupping-glasses.* More certainly still than in vaccination, the blood is here the agent of transmission.

The operation of tattooing also appears to have sometimes been a means for the propagation of syphilis.† A circumstance more regrettable, but one which cannot be denied, is, that operations performed without sufficient care by physicians or surgeons have, in some instances, given rise to syphilitic contamination. It is thus that, within the last few years, there have been seen in Paris itself cases of syphilis which appeared not to have had any other origin than catheterism of the Eustachian tube. At the meeting of the Medical Society of the Hospitals, September 28th, 1861,‡ a female patient who had been infected in that way was presented by Lallier, and at the following meeting, October 12th, thirteen cases of communication in the same manner were quoted by various members. It is true, however, according to Dr. Roger, that some of these cases might tell in two ways.

In 1863, my friend Dr. Maurice Raynaud showed me at the Saint-Louis Hospital a victim of this operation, under the care of Hardy. In this very year, a case which deserves to be added to the preceding was published in the *Gazette hebdomadaire*. Fortunately for the honour of the medical profession in Paris, it must be added that all the patients in question were treated by the same specialist.§ Another point to be remarked is, that in a great number of these cases the syphilis assumed a severe form.

It is evident that catheterism of the bladder is liable to the same objection. If there is not as yet any case showing this mode of contagion, is it not on account of the seat of the evil? A speculum or syringe has also been known to transmit the poison of chancre.||

* See Astruc, *De morbis venereis*, 1740.

† See Petry, *Uebertragung der secundären Syphilis durch das Tattowiren* (*Allgem. Wien. med. Zeitung*, No. 14, 1859).

‡ See *Union médicale*, October 11th, 1864.

§ A fresh case has just occurred (see *Gaz. méd. de Lyon*, March 1st, 1866).

|| Tardieu, *Étude médico-légale sur les maladies accidentellement et involontairement produites par imprudence, négligence, ou transmission con-*

Thus both surgeon and physician ought to pay the greatest attention to cleanliness in the exercise of their profession. There is a surgical operation now out of use and in which syphilis appears sometimes to have been transmitted, viz., transplantation of teeth. Some cases quoted by Hunter in reference to this subject appear to leave little doubt, despite the contrary opinion of that surgeon himself.

Occupations.—It is clearly proved at present that certain occupations have sometimes served to propagate syphilis. Several instances of the propagation of that disease amongst glass-blowers have been observed by the physicians of Rive-de-Gier, where there is a manufactory of glass. Dr. Niobis, a physician in that locality, has seen about ten cases of this kind, and Rollet,* who was able to verify them, has justly appealed to them as proofs of the contagiousity of secondary lesions. The fact is, that mucous patches, always so frequent about the mouth, are, under such circumstances especially, much more frequently the source of the contamination than chancre. Moreover, nothing is more favourable to the morbid transmission than the obligation of a workman to take immediately and to press between his lips the iron tube which one of his fellow-workmen, affected with buccal lesions, has just had in his mouth.† The knowledge of this source of contagion has sufficed for the extinction of it. Diday proposed that the workmen should be examined once a fortnight, and that none should be admitted to the works except with a certificate of health from a medical man. Chassagny, for fear this expedient might appear vexatious to the workmen, advised them to make use of a mouthpiece into which to introduce the tube. Each workman, having his own mouthpiece, necessarily ceases to be ex-

tagieuse comprenant l'histoire médico-légale de la syphilis (Ann. d'hygiène et de méd.-légale. 2^e série, t. xxi. p. 371).

* *Arch. de méd.*, 1859. *Gaz. méd. de Lyon*, Nov. 16th, and Dec. 1st, 1862.

† The propagation of syphilis in the practice of glass-blowing has not only excited the attention of medical men, but it may be said that the reality of this mode of transmission has been legally established. To the cases already known may be added those which presented themselves at the glass-works of Montluçon, where a single workman who had syphilis contaminated twelve others. A kind of slight epidemic resulted therefrom, of which Dr. Dechaux has given an interesting account in the *Gaz. méd. de Lyon*, Nos. 15 and 16, 1867.

posed to the danger. This very applicable means was also recommended by Viennois at the Congress at Rouen.*

Various objects.—*Kitchen utensils, linen, clothes, &c.*—Léonard Botal relates that an intimate friend of his, a truthful and respectable man, was very severely affected with syphilis, and that he always protested most vehemently that he did not know how he had contracted the disease unless it was from drinking out of the same glass with a man with whom he was living on familiar terms and who was then suffering greatly from the disease.†

In Rollet's interesting report,‡ we find the case of a young woman of irreproachable morals who contracted syphilis, the first manifestation of which was a chancre upon the lip. After questioning this patient in the presence of her mother and husband, Rollet came to the conclusion that the disease had been communicated by the cook. The latter, who had been ill for eight or ten months, had the isthmus of the throat occupied by an eruption of confluent mucous patches, and the young lady was in the habit of tasting all the dishes prepared by her servant, with the same spoon and immediately after her. The tobacco-pipe, so common an object and one so easily and so willingly lent to a friend, must also be regarded as frequently serving to communicate syphilis: this mode of transmission, of which certain facts leave little doubt, has been observed by us in the case of a friend.

The use of linen belonging to diseased persons is another cause of the propagation of syphilis, which, if we may believe ancient authors, is not very rare. Nicolas Massa § asserts that he cured one of his friends, who had contracted the disease from having slept for a single night in the sheets which had served for a man affected with a venereal ulcer on the leg. Fabricius de Hilden relates || that a young girl of 15, being in carnival amongst a party of gentlemen, and having changed clothes with a young man, contracted venereal pustules and ulcers on the genitals by mere contact with his drawers, which were infected. These two cases and another by Ant. Fracanziani, ¶ who relates that he saw a young girl of 7 who got the

* See *Gazette hebdomadaire*, p. 666, 1863.

† *Lib. de luis venereæ curandæ ratione*, cap. iv.

‡ Rollet, *Recherches cliniq. et expériment. sur la syphilis*. Paris, 1861, Obs. XXVI. and XXIX.

§ Nicolas Massa, *Lib. de morbo gallico*, tract. i. cap. ii.

|| Fabr. de Hilden, *Obs. chir. et méd.*, 1716, centur. i. Obs. C.

¶ Quoted by Astruc, t. ii. p. 10.

disease from having worn a leather garment which had been used by a syphilitic woman, would doubtless not have much weight at the present day if a distinguished observer of our own time, H. Clerc, had not seen a very similar instance. An old man of more than 70, who for many years had not had sexual intercourse, had an infecting chancre of the glans which, to all appearance, proceeded from the rubbing of the organ against a pair of trousers of very suspicious origin which he had worn for about two months.* Gabriel Fallopius † states that he talked with an old man who had in his house two syphilitic subjects who had numerous ulcers about the posteriors, and who asserted that he had contracted the disease from making use of the same privies. It is impossible to believe such a case; but I have pointed out this and the preceding cases because I am anxious to call attention to the circumstance that the mediate contagion of syphilis is more frequent than is commonly supposed.

CONDITIONS AND IMMEDIATE RESULT OF THE CONTAGION.

Whatever may be the product of secretion which contains the virus, and the manner in which this morbid agent is conveyed, it is necessary, to render contagion possible, that this seed should fall upon some ground, and to enable it to germinate, it is further necessary that it should penetrate, without which it dries up and remains sterile. We know that an individual already under the influence of syphilis is incapable of contracting the disease afresh, and that infected nurses do not suffer from suckling a syphilitic child. But, independently of these cases, it is a fact that certain individuals are refractory to syphilis without its being possible to know why such is the case. It is unknown whether this is the effect of a general disposition or of a purely local condition. Either state of things may exist. We know little of the general dispositions in reference to this immunity. As regards the local condition, it is very probable that the introduction of the virus is difficult, if not impossible, without a cutaneous or epidermic erosion. Fabre believes absorption to be possible without any kind of wound, but admits that it is easier when the virus is deposited upon a mucous

* See A. Martin, *thèse citée*, p. 44.

† G. Fallopius, *De morbo gallico tractatus*, cap. xxii.

membrane covered with a thin epithelium. Ricord,* on the contrary, thinks with the majority of modern syphilographers that the presence of an excoriation is necessary. After having given some cases in support of this view, he adds :—"These cases, which I could multiply, prove that the physiological conditions of the act of coitus have no share in the contagion of syphilis." The numerous cases of contagion which we have given above do not leave the least doubt in this respect. Are not the regions most frequently contaminated, such as the lips and breasts, remarkable for their tendency to crack? The cases already quoted of women infecting individuals after an impure connection, and themselves remaining healthy, appear to furnish a strong argument in favour of the necessity of an excoriation for the absorption of the syphilitic poison.

Ricord has said that chancre is the necessary exordium of acquired syphilis. This law has since been confirmed by numerous researches, and particularly by those of Alf. Fournier, who found that, in 1,046 male patients, the existence of chancre was ascertained 1,033 times, either from information furnished by the patients, or from the result of a personal investigation. Thirteen times only out of that number was chancre not made out in a positive manner to be the origin of the disease, which is evidently no proof that it was really wanting. When the contagiousity of the primary lesion only was admitted, the law established by Ricord could not appear extraordinary; but when the contagiousity of secondary lesions was proved, there were grounds for asking whether this law always held good. Observations were not long wanting, and a discussion as to priority soon arose; but on this point, as on so many others, there already existed important data which it would have been well to bring forward at the very first.

Brassavole in 1550† and Rondelet‡ in 1574, wrote that in infected nurses the syphilis commences by ulcers of the breasts. A. Trajan Petronius used very similar language.§ "The first part to

* *Lettres sur la syphilis*, 3^e édit. Paris, 1863, p. 183.

† *De morbo gallico tract.*, cap. xxii. See further on, in the Medico-Legal part, the precise quotation of Brassavole. ‡ *Aphrodisiacus*, p. 935.

§ Videmus infantes ulcere in labiis primum orto in luem gallicam incidere, nutrices in papillis, viros in pene, meretrices in vulva. . . . Primi affectus sunt velut ulcera in pene, in vulva, in ano, quæ coitu contrahuntur, in labiisque tum suctu, tum osculo, in maxillisque nutricibus inquinatos infantes lactantibus evenire solent. *Aphrodis.*, p. 1167,

be affected (in nurses)," say Fabre,* "is the nipple, because the child's mouth impregnates it with infected saliva. There supervene then, in this spot, first painful phlogosis and afterwards small pimples which become converted into ulcers or chancres; very often, the glands in the axilla, or those of the neck, become enlarged at the same time, also those in the groins, where buboes supervene when the chancres occupy the genital organs. After these primary symptoms, the nurse experiences others characteristic of confirmed syphilis, &c. . . ."

Bosquillon is not less explicit in his translation of Bell,† when he says:—"Hereditary syphilis is communicated with extreme facility. If a child thus infected be given to a healthy nurse, the nipple of the latter is soon observed to swell and become red, the inflammation reaches the areola and in a few days small vesicles appear and become transformed into ulcers having all the characters of venereal ulcers; the axillary glands become swelled and the disease long resists specific treatment." According to Petit-Badel,‡ chancre of the breast, common enough in nurses who take children infected with ulcers of the mouth, always manifests itself at the outset in the form of a small red *pimple* which itches very much; this pimple soon comes to a head, becomes inflamed and excoriated, spreads, and, occupying the whole nipple, discharges a viscous whitish matter. We read again in Delpech's (of Montpellier) Clinical Surgery:§—"It happens not unfrequently that kisses upon the mouth, given by persons infected and having some of the symptoms of syphilis in the throat or mouth, give rise to an infection occurring at the free edges of the lips. There are then generally seen one or more ulcerations, usually followed by inflammatory swelling of the corresponding lymphatic glands, those of the jugular or sub-maxillary regions. This consequence is so common, that the concomitant or rapidly supervening swelling of the glands may serve to distinguish primary or chancrous ulcerations from secondary ulcerations proceeding from old syphilis, and which never occasion similar lesions. Chancre and bubo are then the exclusive symptoms of syphilitic infection communicated by the mouth." After these quotations, long commen-

* Fabre, *Traité des malad. vénér.* Paris, p. 15, 1773.

† Bell, *Treatise on venereal diseases*, &c.

‡ *Cours des maladies syphil.*, t. i. 1812, p. 361.

§ *Chirurg. clinique de Montpellier*, t. i. 1823, p. 326.

taries are needless to show that a certain number of physicians of past centuries and of the beginning of the present one were led by clinical observation to regard as the analogue of infecting chancre the lesion which results from the contagion of secondary affections. But these facts were forgotten when, on the 14th of November, 1855, Auzias Turenne asserted, before the Medical Society of the Pantheon,* that there is no induration more strongly marked than that which occupies the spot contaminated by the communication of syphilis by means of secondary lesions.

At the meeting of the 13th of the following February, Langlebert expressed for the first time the idea which he afterwards developed,† viz., that secondary syphilis, in its transmission, reproduces primary syphilis, *i.e.*, chancre. This proposition, then based upon a small number of facts only, was soon accepted, developed, and propagated by Rollet, of Lyons,‡ and his two chief pupils, Guyenot§ and Viennois.¶ Appealing to experimental facts and collecting a great number of clinical observations, Rollet succeeded in raising to the position of a principle, a pathological law, a dogma, the fact that syphilis, whatever may be its source, always commences by a primary chancre. But is this dogma as absolute as the Lyons syphilographer is inclined to consider it?¶ Such is not the opinion of Dr. Ricordi, of Milan, who brings forward cases to oppose it in which the first effect of contamination by secondary affections is not a chancre, but a simple papule. These cases, which were not yet published when the first part of this work was printed, are too important and too much in accordance with the division we have established concerning the forms of the primary lesion (see Vol. I. p. 79), to be omitted here. We give them as briefly as possible.

A woman contracted an ulcerated chancre on the breast from having suckled her neighbour's child, which had syphilitic lesions of the mouth. This woman continued to suckle her own child under these circumstances. Ricordi observed in the latter, a little to the right of the tip of the tongue,

* *Extrait des procès-verbaux de la Soc. méd. du Panthéon*, p. 6. Paris, 1865.

† *Moniteur des hôpitaux*, Dec., 1858. *Du chancre produit par la contagion des accidents secondaires de la syphilis*, 1862.

‡ *Gaz. méd. de Lyon*, January, 1859; et *Arch. gén. de méd.*, 1859.

§ Guyenot. Thèse de Paris, 1859. ¶ Viennois. Thèse de Paris, 1860.

¶ Rollet, *Recherches sur la syphilis*, 1861, p. 237 et suiv. Cullerier, *Rapport à la Société de chirurg.*, 1862.

an opaline papule scarcely raised at all, which rapidly increased in size and formed, at the end of four days, a small patch of the size of a lentil, harder than the tissue of the tongue, painless, with corresponding swelling of two sub-maxillary glands. There finally remained a small livid spot; but during its existence, the papule never became ulcerated. (Obs. XLI. by Ricordi.)

In an observation by Pellizzari, it is a question also of a primary papule of the breast which had been produced by a mucous patch in the mouth. (Obs. XLII. by Ricordi.)

A woman named Angela contracted the disease from her child, which had been suckled four or five times by a neighbour affected with ulceration of the nipple from having nursed a foundling in the Hospital Saint-Catherine. Three weeks after, this neighbour presented two ulcers at the angles of the lips and a purulo-sanguineous discharge from the nose; also ulcerated mucous papules in the fold of the neck and on the buttocks. These symptoms still existed when the child entered the hospital with its mother. The latter was not then infected; the breasts, axillæ, and vulva were all healthy. She continued to suckle her child. Four days after her admission, she presented at the outer side of the areola of the left breast, a reddish spot slightly elevated, of the size of a small lentil, dry, painless, and without induration. On the following days, this spot gradually became raised and was accompanied by induration of *four corresponding axillary glands*. Sixteen days after the first manifestation of the papule on the breast, her child was cured of the lesions of the mouth, and the papule itself was beginning to throw off its crust. Under the detached scales of the epidermis was seen a protuberance of the size of a small pea, soft, red, and free from ulceration. This small tumour disappeared after cauterisation with nitrate of silver.

A young woman, æt. 22, saw appear under very similar circumstances to those of the preceding case, on the outer part of the areola, a small red spot, such as is observed in measles. In five days, this spot increased to double the size and began to be raised; some of the glands in the corresponding axilla then became affected and soon presented types of specific bubo. The mammary papule soon attained the size of a lentil and assumed a dark red colour, but it always remained dry and perfectly intact. Later on, secondary symptoms supervened, and especially a papular syphilide. (Obs. XXXIX. by Ricordi.)

We have here four cases in which the initial form of the syphilis was a papule which did not become ulcerated, and thus, says Dr. Ricordi, the law propounded by Rollet is not exact, since, according to that observer, or at least according to the school which he represents, it remains to be proved that indurated chancre may exist, even exceptionally, without ulceration.* It appears to us that these cases

* L. Nodet, *Études cliniques et expériment. sur les diverses espèces de chancre*, &c. Paris, 1864, p. 17.

do not invalidate the principle laid down by Rollet, but simply prove that that distinguished physician has not recognised all the initial forms of the primary lesion; at the same time, they justify the description which we have given above (Vol. I. p. 80). In fact, it is a primary lesion and not a secondary manifestation which is the origin of the syphilis in the cases given by Ricordi, and the proof of this is, as Ricordi himself remarks, the incubation of the lesion and the existence of concomitant adenopathies, circumstances which do not belong to secondary affections.

† To know what relation exists between the contaminating lesion and the initial manifestation of syphilis is a point which we have already discussed, and upon which the observations of Ricordi have served to throw more light, since they show that dry papules and chancrous erosions are frequent consequences of the contagion of secondary affections. But are we to understand that these affections never give rise to indurated chancre. By no means. The projecting, red, papular or tubercular, initial point often becomes covered with a crust, and later on, when this disappears, there remains an ulcer with an indurated base and looking more or less as if scooped out, in fact, a typical indurated chancre. On the other hand, it is more than probable that indurated chancre does not always engender a similar lesion; it may give rise to one of the other two varieties, and especially to chancrous erosion. Thus the initial form of syphilis would appear to depend partly upon the constitution of the individual affected.

Such are, to sum up, the various points included in the study of syphilitic contagion. The great practical interest of this question, the difficulties connected with it, and the numerous vicissitudes it has undergone, are so many circumstances which have induced us to discuss it somewhat at length, but which it is possible to condense into a small number of aphorisms:—

1. Syphilis is not contagious for an individual who is already under the influence of the infection; in other words, it does not become doubled.

2. This disease is transmitted with certainty by the primary lesion and by secondary affections of a secreting nature. It is not proved that it is transmissible by means of tertiary affections; but the contagious properties of the blood in the primary period, or at the very least in the course of the secondary period, cannot be denied.

3. Whatever may be the source from which it proceeds, syphilis

always commences by one of the varieties of the primary lesion. Although no absolute relation exists between the contagious lesion and the primary manifestation, it may nevertheless be affirmed that the dry papule and the chancrous erosion are, more frequently than indurated chancre, the sad consequence of the product of secretion furnished by secondary affections.

§ 2. *Hereditariness.*

It was in 1536 that Paracelsus, the great innovator of the period, clearly pointed out for the first time the transmission of syphilis by inheritance:—"Tandem fit morbus hereditarius et transit a patre ad filium, ab infecto ad alium. . . . Est morbus fœdus, magis hereditarius quam lepra."

Brassavole, in 1550, observed a case of hereditary syphilis in a child which infected its nurse. Amatus Lusitanus, in 1554, related one of the first observations of inherited syphilis. Fallopius wrote, in 1535:—"Præterea videbitis puerulos nascentes ex femina infecta, ut ferant peccata parentum, qui videntur semicocci."

Since that time, the hereditariness of syphilis has been admitted by the generality of syphilographers: A. Ferrier, P. Haschard, V. Rondelet, B. Tomitanus, A. Paré, A. de Blégny, Astruc, Fabre, &c.* Hunter, as we know, denied the hereditariness of syphilis, which did not prevent him from relating two most conclusive cases of congenital syphilis.

The successors of Hunter do not all share his opinion, and some have sought to prove by special treatises the transmission of syphilis by inheritance; such are, in particular, Doublet, Mahon, and Bertin. Ricord, who accepted most of Hunter's views, could not refuse to admit hereditariness; the same holds good for Diday, his pupil. This mode of transmission is, indeed, now one of the most firmly established. The father and the mother are the factors whose single or joint influence requires to be investigated.

Infection by the father.—Astruc recognised the exclusive influence of the father in hereditary transmission, but he regarded it as much less frequent and less certain than that of the mother. Swediaur † relates that a dragoon affected with a syphilitic ulcer of the throat had

* See vol. ii. pp. 136 and 137, of this work.

† *Traité des malad. vénér.*, t. ii. p. 177.

a child which presented the same symptom without the mother's ever having suffered from any syphilitic affection. Bertin quotes a very similar case.* Haase,† V. Gerhardt,‡ Boehr,§ Derschjold,|| Campbell,¶ Bertherand, Cazenave, Diday,** Martinez and Sanchez, Trousseau, and Beyran,†† have given cases which leave little doubt of syphilis transmitted by the father. Three of these cases, given in the thesis of Dr. E. Vidal, appear clearly to establish the hereditary influence of the father. They refer to three physicians who, in spite of previous syphilitic affections, believed they might venture to marry, and whose children presented, a few days after birth, evident traces of syphilitic infection, their mothers never having manifested any suspicious lesion.

This collection of facts furnished by men well informed and placed in conditions of observation often very different from each other, cannot leave any doubt, as it appears to us, as to the exclusive action of the father in the inheritance of syphilis. But some distinguished observers do not share this opinion. Bouchut hesitates to declare himself on this delicate subject, but has finished nevertheless by admitting, in the last edition of his work (1862), that he considers this mode of transmission possible.

Vassal,‡‡ Cullerier,§§ Notta,||| and Charrier¶¶ deny syphilitic infection by the father. They base their opinion upon cases, amounting

* *Traité des malad. vénér. chez les enfants nouveau-nés*, p. 163, Obs. XIII.

† *Allgem. medicin. Annal.*, February, 1829, p. 194.

‡ *Journ. de Siebold*, t. x. § 553.

§ *Journ. der prakt. Heilkunde*, 1836.

|| Quoted by Tronchin, *De l'extinction de la malad. vénér.*, p. 50.

¶ *The London and Edinb. Monthly Journ.*, 1844, p. 514.

** *Traité de la Syphilis des nouveau-nés et des enfants à la mamelle*. Paris, 1854. Most of the cases given above are found in this excellent work.

†† *Transmission de la syphilis du père au fœtus et du fœtus à la mère* (*Union méd.*, t. ii. p. 457, 1862).

‡‡ Vassal, *Mémoires sur la transmission du virus vénérien de la mère à l'enfant*. Paris, 1807.

§§ Cullerier, *De l'hérédité de la syphilis* (*Mémoires de la Soc. de chir.*, 1857, t. iv. p. 230).

||| Notta, *Mém. sur l'hérédité de la syphilis* (*Archiv. de méd.*, 5^e série, t. xv. p. 272, 1860).

¶¶ Charrier, *De l'hérédité syphil.* (*Archiv. de méd.*, 5^e série, t. xx. p. 334, 1862).

to twenty-six in number, in which syphilitic fathers begot one or more healthy children. I will not attempt to point out what might be thought doubtful features in some of the observations given by those authors: most of them leave little to be desired; but, in such a question, what can negative facts prove against positive facts? Nothing, except that an infected father does not *necessarily* transmit the disease from which he is suffering. More than this: we see children born and grow up healthy, both of whose parents are or have been syphilitic.

In a recent work in which Baerensprung makes known his long experience in reference to the subject we are now examining, we find forty cases of hereditary transmission by the father infected at the moment of procreation; the mothers manifested symptoms in the course of their pregnancy only. If most of these cases leave nothing to be desired, there are some of them, however, which are not perfectly conclusive, on account of the doubt which exists as to the exact moment of the syphilitic infection in the woman. I have myself twice observed congenital syphilis in children whose mothers had never presented anything, and a medical friend of mine, practising in the country, has often told me that having to attend a woman in perfect health, all of whose children died soon after birth, he learnt from the husband that he had had syphilis before marriage; as for the woman, she never showed any symptom of the disease. Thus the fact of the transmission of syphilis by the father cannot be denied.

But under what circumstances, and during what period of time, is this transmission possible? Several of the cases mentioned above teach us that this mode of transmission exists so long as the father is the subject of primary and secondary symptoms. But what occurs when he is exempt from these? Diday quotes several instances of syphilitic transmission in this state. Baerensprung has given fourteen cases in which, despite the latent condition of the syphilis in the father at the moment of procreation, both child and mother were infected. Consequently, a father healthy, or at least exempt from any manifestation of syphilis, is nevertheless capable of infecting the child which he begets.

The Berlin professor has sought to push his analysis further, and asks himself whether, in these cases, the degree of severity for the fœtus is the same. Then, comparing sixteen cases of a first series of observations, in which the father had symptoms of syphilis at the

moment of procreation, with fourteen cases of a second series, in which the father was exempt from any manifestation, he has come to the conclusion that abortion is less frequent in this latter series, which appears to indicate a diminution in the power of transmission. In a third series of cases collected by the same author, in which the syphilis in the father is always in the secondary period, but weakened by time and previous treatment, the fœtus was still infected; here the mothers, who were infected in the other cases, continued healthy. Lastly, in a fourth series of observations, containing eight cases of tertiary syphilis in the father, neither the mother nor the child was infected with the disease.

From the comparative examination of the numerous cases collected by Baerensprung and from those observed previously, it follows, that syphilis in the father is transmissible during the primary and secondary periods; but that it is no longer so in the tertiary period; or if it be so still, it is so in a much slighter degree.

Infection by the mother.—The influence of the mother in the hereditary transmission of syphilis is less disputed than that of the father; but, in our opinion, it is doubtful whether it be more powerful. Numerous cases too long to be given here prove this influence in a peremptory manner.* In ten observations of mothers infected while the fathers continued healthy, Baerensprung generally saw frequent abortions, or delivery before the full term. The effects were as severe as in the cases of infection by the father. But when the syphilis in the mother had been weakened by time, or by previous treatment, the abortions were rare, the children were mostly born at the full term and alive, a certain number of them were curable, and the hereditary transmission showed itself less intense, as indicated by eleven cases related by the author. In six cases in which the mother was affected with tertiary lesions, there was no hereditary transmission. The effects of syphilis proceeding from the mother do not differ notably from those produced by syphilis in the father.

* Diday, *Traité de la syphilis des nouveau-nés*, 1854, has collected several observations which prove the truth of this assertion. The nurses infected by strange nurslings furnish on this point irrefutable facts. See Bertherand, *Précis des malad. vénér.*, 1852. Whitehead, *Transm. de la syphilis des parents aux enfants* (*Arch. de méd.*, 1857, t. ii., p. 371). Bardinet, *De la syph. hérédit. et de sa transmissibilité. Mémoire présenté à l'Acad. de méd.*, December 28th, 1852.

Infection by the father and mother.—The transmission of syphilis under these circumstances is the logical consequence of what has already been said; it is proved by numerous observations in which it has been seen to give rise to very serious consequences. Abortions then succeed each other in the same family and only cease under the influence of time and of the good effects which may result from a specific treatment. It would be wrong, however, to suppose that the children are always doomed to certain death. "Two children were born healthy in the first years of a marriage. After that time, the mother was infected by her husband; both of them, affected with secondary syphilis, were treated with Zittmann's decoction and mercury. A year afterwards the woman again became pregnant; the child was born at the full term and remained healthy for five years, when it had eczema. Three children born since that time have continued healthy."*

After the above, it is unnecessary to insist further upon the physiological mechanism of syphilitic hereditariness. If the father alone be infected, it is clear and patent that the transmission occurs by the semen; but if the mother alone be infected, does the same thing still hold good? This is a disputed question, and while certain observers, as Cusco and Peter,† assert that the blood is the chief agent of infection, there are others who attribute to the ovum alone the power of this transmission. We can bring no direct proof in support of either opinion; but, considering the difficulty of inoculation of the blood, and above all the great analogy in properties and characters between the secretion of the testicles and that of the ovaries, there is reason to believe in the influence of the ovum rather than in the action of the blood. The hereditariness of syphilis appears to us to be effected more especially by the modified and vitiated germ. What, in fact, is the germ but an anatomical element, a cell which, like all the cells of the infected economy, has undergone the impregnation of the poison? ‡ A microcosm of the

* Baerensprung, *Die hereditäre syphilis*. Berlin, 1864, p. 149.

† Peter, *Des maladies virulentes*. Thèse de concours pour l'agrégation en médecine. Paris, 1863. Compare: Luys, *Des malad. héréd.* Thèse de concours. Paris, 1863.

‡ See on this subject an interesting communication made to the Academy of Sciences by one of its members, M. Coste, from which it results that the colouring matter peculiar to the flesh of certain species of the family Salmonides exists in the contents of the ovum, and in the

diseased being, the germ can only reproduce an organism similar to that from which it proceeds ; otherwise it would be necessary to renounce the experience of every day and the most general laws of natural science. What has always surprised me is to see physicians, agreeing therein with people in general, invoke the action of the blood to explain the mechanism of hereditariness. This error evidently cannot be perpetuated, at all events amongst medical men.

embryon ; but if, placed under special conditions, these specimens lose this colour, the ova lose it also, and the flesh of the products is no longer coloured.

CHAPTER II.

PREDISPOSING AND DETERMINING CAUSES.

AFTER having pointed out the efficient cause of syphilis and made known its various modes of propagation, it remains for us to study the action of external influences and individual conditions in reference to the appearance, the form, the course, and the evolution of syphilis. These circumstances, which are in reality to be regarded as the predisposing or determining causes of the disease, are numerous and varied. We shall pass successively in review the physical and climacteric influences, the hygienic influences, and then the physiological and pathological influences.

PHYSICAL AND HYGIENIC INFLUENCES.

Without any action upon the genesis of syphilis, physical agents play a certain part in the development of its manifestations. This influence did not escape the notice of Hunter, who had a certain tendency to exaggerate it. "It is certain," he wrote, "that cold has a very powerful action upon the animal economy. It appears, at least, to have a great influence in predisposing the human body to receive the venereal irritation, and to manifest its morbid phenomena more rapidly."*

The fact is exact; but it cannot give, as Hunter would have had it do, the explanation of the course of syphilis from the superficial parts towards the deep-seated parts.

Traumatism is one of the causes which chiefly serve to fix the seat of the anatomical determination of syphilis. Duverney † attributes the greater frequency of exostoses upon the bones situated superficially to the circumstance that those bones are, more than the others, exposed to the action of the air, to contusions, and to various kinds of injury. Virchow points out this determining cause

* Hunter, *Treatise on venereal diseases*

† Duverney, *Maladies des os*. Paris, 1751, t. ii. pp. 477-479.

in the production of affections of the liver. The fact is, that we cannot doubt this influence, which is mentioned in several of our observations in reference to the lesions of the liver and other viscera.

Side by side with the action exerted by traumatic agents is to be placed the influence of cold and of heat. "Heat," says Martius,* "favours the appearance of syphilides more than cold; the influence of a temperature low for our climates, such as 3° above 0 (centigrade), as a mean, is almost as energetic as that of a mean heat of + 16°, since the number of syphilides produced by these two causes are to each other as 3 to 4. A mean temperature of + 6°, 4 appears more fitted to prevent their appearance. The influence of temperature makes itself felt in a very short time, and artificial cold and heat have the same influence as the natural temperature of the atmosphere."

Thus the warmest and the coldest seasons equally predispose to syphilides. It is evidently by their degree of temperature that vapour baths or common baths exert a provocative action upon these manifestations; violent exercise no doubt acts in the same way. Climates too warm or too cold, and all those which expose persons to rapid changes of temperature, are conditions little favourable to syphilis. Thus Daniell speaks of syphilis being severe and malignant on the east coast of Africa. Veit and Brocchi have observed it to possess the same characters in Sennaar, and Petit in the interior of Abyssinia, Furnari, Deleau, Armand, and Daga have made known its degree of intensity in Africa, Porter in the Sierra-Madre of Saltillo in Mexico, Hunter in the Antilles, and Bernhard in central America. Sigaud and Bibra have seen this disease commit considerable ravages in Brazil and Chili. Lesson has described its intensity in the Moluccas and in several of the South Sea Islands. Schanks, MacGregor, Leslie, and Heymann, equally complain of its malignity in India and in the Indian Archipelago. Monat declares that in the Bengal Presidency it presents the same appearances as in Europe.

We know, from other sources, the severity of syphilis in the north of Europe, and especially upon the coasts of Sweden and Norway, and in the north of Germany and Russia. Let us add

* Martius, *Mémoire sur les causes générales des syphilides*. Thèse de Paris, 1838, p. 73.

that this disease is not less severe in North America. Consequently, cold climates are not more favourable in this respect than hot ones. The temperate regions, and particularly those whose climate varies little, are much more favourable, as shown by the data furnished by various authors and especially by Thiéry for the Spanish province of Estremadura, by Ménis for Brescia, by Quitzman, Roser, and Olympias for Greece, by Hennen for the Ionian Islands, by Barasch and Oppenheim for Turkey, by Robertson for Syria, by Polak for Persia, by Aubert-Roche for the coasts of Abyssinia, and by Pruner for the interior of Egypt.

It would be wrong, however, to believe that in these latter regions syphilis will always present itself in a benignant or little severe form; other conditions than climate may impart to it a different character. It is seen to assume severer forms in certain seaport towns apparently the best situated in respect to climate, such as Barcelona (Cuynat), Marseilles, Naples, &c., and that doubtless on account of greater excesses, overcrowding, want of cleanliness, and misery in those localities than in the neighbouring towns. To sum up, a climate which varies little, and of which the temperature is moderate and scarcely different from that of the place in which the disease was contracted, is that which, according to Sydenham, should be chosen by preference by persons affected with syphilis. "Syphilis showing itself for the first time in any climate," says Swediaur,* "is very violent in its effects; but it is much more so when it is imported from a warm country into a cold climate." The severity of the epidemic of the fifteenth century appears to support this view.

As regards the nature of the modifications produced in syphilis by a given climate, observation teaches us that primary and secondary lesions predominate in warm climates, such as Italy, Sicily, Greece, Turkey, Persia, India, &c., while deep-seated, tubercular or osseous affections are comparatively more frequent in cold countries, such as Russia and Sweden. This explains, to a certain extent, the frequency of epidemics of syphilis in certain countries, such as Italy, or the locality of syphilitic contagion in certain other countries, *e. gr.* in the East (Poyet) and in Africa (Daga).

Of all the hygienic influences, poverty and want of cleanliness are, perhaps, those which contribute most powerfully to the aggravation

* *Traité des maladies syphilitiques*, t. ii. p. 67.

of syphilis. It is, in fact, to the combination of these two causes that we may attribute the malignity and the extension of *schierlievo* on the borders of the Adriatic and in the Tyrol, and of *radesygge* in Sweden. Density of population, which does not fail, in general, to cause immorality, is another condition not less deleterious, and there is every reason to believe that the overcrowding of the workmen amongst whom the so-called "Ditmarsch disease" developed itself was not without influence upon the severity of its form. Starting from these data, it is easy to explain the appearance of the great epidemics of syphilis consequent upon wars, in which most of these unfavourable conditions are found combined. Food insufficient in quantity, or bad in quality, is also, as Bassereau has pointed out, a powerful cause of the aggravation of syphilitic symptoms. To sum up, the crowding together of a great number of persons, the immorality resulting therefrom, and food often disproportionate to the fatigue undergone, are so many causes which may serve to explain the extension and the severity which syphilis sometimes assumes.

The abuse of spirituous liquors is another kind of occasional cause pointed out by some authors. Excesses in wine or spirits, says Boerhaave, are unfavourable to syphilitic subjects. Observation, writes Ricord, has shown what occurs from the abuse of spirituous liquors, especially in warm seasons. The simplest chancres, under their influence, rapidly become inflammatory, and in certain regions, especially in the genital organs, the cellular tissue of which easily becomes cedematous, the inflammation soon produces gangrene.* Bassereau† also points out the deleterious influence of spirituous liquors, to which he attributes, in certain cases, the precocity of syphilides. We have had several opportunities of observing this influence; the following case is a good instance of it:—

A male patient who had been under our care for a year, for visceral syphilis (liver, spleen, and glands), feeling better and believing himself to be permanently cured, thought he might without danger relax somewhat the severity of the diet we had prescribed for him. But after a rather prolonged drinking bout, there supervened an exostosis on the forehead. Appropriate treatment (iodide of potassium) soon caused it to disappear. Some time after, the patient

* Ricord, *Lettres sur la syphilis*, 3^e édit. Paris, 1863, p. 255.

† Bassereau, *loc. cit.* p. 306.

again believed himself thoroughly cured, and had another drinking bout, but had a fresh exostosis in the same region.

PHYSIOLOGICAL INFLUENCES.

These influences, which are numerous, depend upon the age, the sex, and the great physiological changes which take place in the organism in the course of our existence.

Age.—No age is exempt from syphilis; from his birth to the most advanced old age, man shows an unfortunate aptitude to contract that disease. There are ages, however, at which syphilis is more common. It is during the first days after birth that hereditary syphilis shows itself, and youth is the period in which acquired syphilis is most frequent, because it is the period during which man exposes himself most to contagion.

In 158 patients examined in reference to this question, Cazenave* found—

From birth to 10 years,	1 case	(hereditary syphilis).
From 10 to 20	„ 2	„
From 20 to 30	„ 67	„
From 30 to 40	„ 43	„
From 40 to 50	„ 27	„
From 50 to 60	„ 11	„
From 60 to 70	„ 2	„

The influence of sex is also null. Whatever certain observers may have said on this subject, men and women are equally liable to contract syphilis, and if fewer women are affected with it than men, it is, as Bassereau has shown, because the number of women who give themselves up to debauchery is infinitely less than that of men.

Constitution and temperament also do not predispose to syphilis, any more than they modify its effects in a notable manner; such, at least, is the result of the observations of Martius and Bassereau. No temperament, no constitution, says this latter author, can be regarded as disposing particularly to the generalisation of syphilitic symptoms. The influence of temperament manifests itself really only in the form of the symptoms, and in their course, duration, and greater or less tendency to yield to, or to resist treatment.

* A. Cazenave, *Traité des syphilides*, p. 521.

What is the influence of races upon the development of syphilis? A first point to establish is, that no race is exempt from that disease. In fact if, as Schleissner points out, syphilis has never been able to become implanted in Ireland, this immunity in no way depends upon the race of the inhabitants of that country. The same applies to the immunity observed in certain tribes of the central part of Africa, where the race, according to Livingstone, has never been crossed, since this immunity does not extend to the whole negro race, and since, on the contrary, syphilis commits dreadful ravages amongst the blacks of the west coast of Africa and in the countries situated to the east of Soudan. There is, moreover, nothing strange in this when we know that privileged individuals may expose themselves to contagion with impunity. This fact has long been known, since it was already mentioned at a period in which syphilis raged with intensity. In fact, J. Cataneus writes:—"Vidi tamen complures concubitus immundarum non recusantes, et in sordes venereas sese præcipitantes qui tamen nullam inde infectionem hauserunt."* As regards the influence of race upon the form or severity of the disease, we are taught by observation that in the countries in which the races live intermixed, and especially in the tropical regions of Asia and America, there is not any notable difference in this respect; but nevertheless it follows from the facts observed in Turkey by Rigler, that the destruction of the pharynx is more frequent amongst the coloured races. Pruner points out that in the countries of the East, and particularly in Egypt and Arabia, the tendency to erythematous, vesicular, and squamous eruptions is in proportion to the fineness and whiteness of the skin. On the other hand, serpiginous and warty eruptions and nodes are rather forms peculiar to individuals whose skin is thick, like the Egyptians and Abyssinians. Amongst the latter, the syphilides have a great resemblance to pian. The spots and cicatrices are, moreover, darker coloured or blacker in individuals whose skin is blackest.

I should have nothing further to add concerning the influence of race if the idea had not recently been started that syphilis may become aggravated by transmission from one race to another:—"If we renew the poison," says G. Gauthier,† "by drawing it at distant

* *De morbo gallico tractatus*, 1504.

† G. Gauthier, *Deux années de pratique médicale à Canton (Chine)*. Thèse de Paris, 1863.

sources from subjects of a different race, inhabiting a different climate, and submitted to a different hygiene, we shall immediately see the disease assume a surprising intensity, and lesions the most insignificant become very serious." This proposition is based upon the fact that in the seaport towns of China, and perhaps also in some others, syphilis is more common and more intense in the sailors and soldiers who put in there. It is not my intention to contest this opinion, after what has already been said of the severity of syphilis in seaport towns. But is not this a complex problem? Are there not, apart from the question of races, peculiar conditions capable of contributing to the aggravation of the disease? The passing from one locality to another, the temperature of which is not the same, the want of acclimatisation, and frequently intemperance also, appear to us to be so many circumstances the influence of which is, perhaps, much more considerable than the circumstance of the transmission of the poison between individuals of different races.

The age of puberty in both sexes, pregnancy, and the cessation of menstruation in women, are circumstances which here, as in the generality of diseases, frequently play the part of occasional causes. Puberty is a period at which cases of tardy inherited syphilis do not fail to manifest themselves. Pregnancy, on the other hand, is a period in which secondary affections rarely fail to appear in women recently infected. One female patient seen by us, and who was infected a short time before becoming pregnant for the first time, had six pregnancies, and in each of the first four she saw appear mucous patches or syphilides, and sometimes both these forms of lesion. Facts of this kind are numerous, and to become convinced of this it is only necessary to read the observations furnished by authors; we see in them that most of the women infected before pregnancy do not fail to manifest, during that period, the signs of syphilis. Like phthisis, syphilis awakes under this influence. At all events, if pregnancy is not, in general, more than a determining cause, delivery may become an aggravating cause, and it is possible that it may impart to syphilis more marked and more serious features. According to Cullerier, jun.,* the symptoms of syphilis are generally less severe during the period of gestation, the infection which may take place at the same time as conception sometimes remaining concealed during the whole

* *Journ. génér. de méd., de chirurg., et de pharm.*, t. lx. p. 343, 1817.

of the pregnancy, and not showing itself openly until after delivery. However this may be, Hunter, Nisbett, Fréteau, Swediaur, Biett, Cazenave, Gibert, Rayer, Alibert, and Martius, assert that syphilis, which has been latent for a longer or shorter time, suddenly declares itself in the form of an eruption on the occasion of pregnancy, delivery, the menstrual period, or the cessation of menstruation. Thus menstruation, and still more the cessation of it, appears to act in the same way as pregnancy and delivery, and, like these two states, to favour the appearance of syphilitic lesions. The venereal disease, says Cullerier,* often shows itself at the turn of life, after having lain dormant for many years, sometimes even for the first time. It has been observed to be then very obstinate, appearing most commonly in the shape of ulcers in the throat and nasal fossæ; affections of the skin and bones are also seen to appear.

PATHOLOGICAL INFLUENCES.

According to Hunter, the least derangement in the constitution is a sufficient cause for the manifestation of syphilis. And in reference to a patient who had had secondary symptoms for the first time in August, 1781, and had a recurrence of them in June, 1782, in consequence of a disease called *influenza*, he asserts that the interval would certainly have been longer if the fever had not determined this second outbreak. Fréteau and Swediaur, and Biett and Alibert, all agree in recognising the influence of acute diseases upon the development of syphilitic affections, and Martius has come to the same conclusion. Bassereau, however, has not entirely verified this result; the cases which he has analysed have taught him that intercurrent diseases which may have weakened the organism at a period little removed from that of the contagion cannot be considered as determining causes of the generalisation of syphilitic lesions in the economy. It is difficult, however, to deny to the eruptive fevers, especially to small-pox and cow-pox, the power of calling forth the manifestations of syphilis. Bamberger † gives two cases in which the influence of an attack of small-pox upon the appearance of syphilitic symptoms appears little doubtful. Friedenger and Viennois ‡ have observed analogous cases in reference to cow-pox, and the latter author has

* *Loc. cit.*

† See *Gaz. hebd. de méd. et de chir.*, 1858, p. 390.

‡ *De la transmission de la syph. par la vaccination* (*Arch. méd.*, June, 1860, p. 647); et *De la syphilis vaccinale*. Paris, 1865, p. 227.

carefully pointed out their great value in reference to the diagnosis of vaccinal syphilis. Moreover, it is not in syphilis only that the eruptive fevers have the sad privilege of acting as occasional causes ; there are other diseases, and especially scrofula and tuberculosis, in which they behave in the same manner.

Like the physical, physiological, and pathological derangements, moral derangements sometimes elicit the determinations of syphilis which had previously remained in a latent state. To this kind of influence may be added the necessity in which a great number of individuals find themselves of marrying at an already advanced age. Military conscription, which leads to this result, is certainly not without its disadvantages in this respect. Lastly, let us add that idleness amongst soldiers, and amongst a great number of young men in general, is also to be regarded as a predisposing cause of syphilis, and, for that very reason, as a cause of degeneration of the species.

PART V.

TREATMENT.

To cure is the duty of the physician, to prevent disease is his highest aim. Syphilis, like all diseases, has necessarily its preventive means and its curative means : let us see what these are.

CHAPTER I.

PROPHYLAXIS.

§ 1. *Public hygiene.*

Gardannet, Traitement des maladies vénériennes. Paris, 1770. *Bourru*, Moyens les plus propres à éteindre le mal vénérien. Paris, 1771. *Restif de la Bretonne*, Le Pornographe. *Marc*, Dictionnaire des sciences médicales, art. Copulation. *Fodéré*, *ibid.*, art. Maison. *F. S. Ratier*, Police médicale contre la propagation de la syphilis (Annales d'hygiène publ. et de méd. légale, 1836, t. xvi. p. 262). *Parent-Duchalelet*, De la prostitution dans la ville de Paris. Paris, 2^e édit., 1837; 3^e édit., 1857. *Vleminckx*, Des mesures adoptées et réalisées en Belgique contre la propagation des affections vénériennes. See *Gaz. méd. de Paris*, p. 1, 1846. *Diday*, *Gaz. méd. de Paris*, 1847, 1849, 1850; et Exposition critique et pratique des nouvelles doctrines sur la syphilis. Paris, 1858, pp. 501-555. *W. Acton*, Prostitution considered in its moral, social, and sanitary aspects. London, 1857. *Sandouville*, Des mesures administratives à prendre dans le but d'empêcher la propagation des maladies vénériennes (Annales d'hygiène et de médecine légale, t. xlv. 1851, p. 72). *Davila*, De la prophylaxie de la syphilis. Thèse de Paris, 1853. *Bouchut*, Traité des maladies des nouveau-nés, 1855, p. 820. *Hutchinson*, De l'influence qu'a la circoncision de préserver de la syphilis (*Med. Times and Gaz.*, 1856; et *Gaz. méd.* 1856, p. 589). *Richelot*, De la prostitution en Angleterre et en Écosse, in Précis hygienique, statistique et administratif sur la prostitution dans les principales villes de l'Europe. Paris, 1857. *Gustave Lagneau*, Mémoire sur les mesures hygiéniques propres à prévenir la propagation des maladies vénériennes (Annales d'hygiène et de méd. légale, 2^e série, 1855, t. iv. p. 317; 1856, t. v. pp. 21 et 241). *A. Fournier*, De la contagion syphilitique. Thèse de Paris, 1860. *F. Jeannel*, Mémoire sur la prostitution publique, &c., 1^e édit., Paris, 1862; 2^e édit., 1865. *Amil. Ricordi*, Sifilide da allattamento, &c., Milano, p. 173. *Goulhot de Saint-Germain et Dupin*, Discours au Sénat. Paris, 1865. *Huet*, Sur les réglemens de la prostitution en Hollande (*Nederl. Tijdschr.*, June, 1865).

FROM the very earliest times, legislators and physicians have understood the necessity of interfering for the mitigation of the ravages committed by venereal diseases. For a long time also, attempts have been made to regulate prostitution.

The only idea in this respect during the earlier periods was to watch over the cleanliness and the dress of prostitutes, and over the luxurious and comfortable fitting up of the privileged houses. In the midst of the unbridled libertinism of the empire, Rome did not seek otherwise to prevent the effects of debauchery. But in the reigns of Constantine, the two Theodosius, and Justinian, severe laws were established for the restriction of prostitution. These laws were prohibitory and ordered confiscation of furniture, clothes, and houses; they decreed whipping, banishment, &c. Everything, in this Draconic legislation, says Parent-Duchatelet, announced good intentions, but a complete ignorance of the manners, habits, and management of prostitutes. The capitularies of Charlemagne present, in our country, the first instance of this excessive severity; but, during the four following centuries, all measures were abandoned despite the greatest immorality. On his return from Palestine, Saint Louis endeavoured to apply a remedy to such a state of things by means of a prohibitory law; but perceiving afterwards that he had only aggravated the evil, he ended by tolerating prostitution, which experience had taught him could not be abolished, and sought to regulate it for the purpose of diminishing the scandal and attenuating the evils of which it is the cause. Since that time, special neighbourhoods have been allotted to prostitutes. Avignon, Toulouse, and many other towns had, like Paris, Venice, and London, their prostitution districts and special laws in reference to prostitutes.

At the time of the epidemic of the fifteenth century, it was sought to separate from all communication with others, even lepers, the individuals convicted of being the subjects of syphilis. The sequestration of syphilitics was the law of that period. The rich were compelled to remain in their houses, the poor were driven away and threatened with death, and abandoned even by the physicians, who felt themselves unable to combat the disease:—"Pauperes hoc morbo laborantes expellebantur ab hominum conversatione, tanquam purulentum cadaver; derelicti a medicis (qui se nolebant intrmittere in curam) habitabant in areis et silvis."* A rigorous measure, adopted first at Strasburg in 1495, and which received, on the 6th of March, 1496, the sanction of the Parliament of Paris, was as follows:—"Premièrement sera fait cry publique d'après le

* L. Phrisius, *De morbo gallico liber*, *Aphrodis.*, t. i. p. 346.

roy, que tous les malades de cette maladie de grosse vérole étrangers tant hommes que femmes, qui n'estoient, &c. . . . partent hors de cette ville de Paris ès pays et lieux dont ils sont natifs, ou là où ils faisoient leur résidence quand cette maladie les a pris, ou ailleurs où bon leur semblera, sur peine de la hart" &c.

A law of James IV. of Scotland, of September 22nd, 1497, also obliged persons affected with the *grand gor* to leave Edinburgh, on pain of being marked on the cheek with a red-hot iron, so that they might be recognised in future.

Voyer d'Argenson in 1714, and Berrier in 1747, both lieutenants of police, were the first persons in Paris who sought to subject prostitutes to sanitary visitation. In 1762, Aulas required that the persons who kept tolerated houses should be made responsible for the sanitary condition of their women, and that all, without exception, should be subjected to constant visits made by surgeons attached to the police and under the direction of a head-surgeon. Gardane in 1770, and Bourru in 1771, each expressed a wish for the establishment of public offices, or of special hospitals, for the treatment of venereal diseases.

In 1778, appeared the celebrated order of the lieutenant of police, Lenoir, an order to which the present administration still has recourse whenever energetic measures become necessary. Nevertheless, in spite of its severity, this order, which was badly carried out moreover, did not improve the state of things. Under the Republic, the want of a distinct organisation made itself more and more evident, and anxiety was felt especially about the means to be opposed to contagion; it was then that a Paris surgeon proposed to establish (1800) in each *arrondissement* a place to which all women of that class should be bound to come to be examined twice a week, and where those should be retained who, having been ascertained to be diseased, were afterwards to be sent to the hospitals. In 1802, a health dispensary was established for this purpose in Paris. In 1811, it was organised with more care, and the benefits of this measure were soon recognised. Before long, in fact, similar institutions were seen to be established in the great centres of population, and thus there became organised in France a system of prophylaxis which is every day becoming more complete. These measures did not, however, appear sufficient to all medical men; some demanded the application of sanitary visits to men also. Ratier expressed the wish to see these visits made in the barracks of large

towns, and to render more frequent the inspection of women. Belgium took the initiative in this respect. The inspection of prostitutes, of servant-women, and of matrons, was made there twice a week and entrusted to a controlling inspector for the purpose of preventing the propagation of syphilis in the army. Moreover, Dr. Vlemminckx recommended that no soldier should be treated in the barracks, and demanded that each one should be required to point out the woman who had infected him. The measures which this eminent inspector caused to be adopted had such results that, in 1846, only one soldier in 190 was syphilitic, while at Strasburg the proportion, according to Bertherand, was one in thirty-three, and at Lyons, according to Sandouville, one in forty, and even this figure was below the reality, since a great number of soldiers were treated privately.

Such has been the progress made in reference to the prophylaxis of syphilis. But the measures to be taken must be considered in respect to men, to women, especially to prostitutes, and lastly to nurses and nurslings.

MEASURES RELATIVE TO MEN.

The general prophylaxis will not be complete, says Aug. Vidal,* until the prevention of the propagation of the evil by men shall be effected. Restif de la Bretonne, Marc, Ratier, Diday, Acton, Sandouville, Davila, and G. Lagneau, regard it as desirable to subject soldiers and sailors to sanitary visits. According to Marc, in times of peace, only men previously ascertained to be healthy should be chosen for cantonments in country districts; no furlough should be granted without first taking the same precaution, and, in case of venereal disease, not until a complete cure had been effected. Davila is of opinion that no national or foreign sailor should be permitted to disembark until after he had been examined. "The importance of examining sailors," says G. Lagneau, "is not doubtful, and its execution not, perhaps, altogether impossible, since quarantine is enforced for individuals coming from countries where the plague exists." As regards soldiers, we have already pointed out the advantages obtained in Belgium from the regulations to which they are submitted, and France, no doubt, might derive the same advantage from the application of the same regulations.

* Aug. Vidal, *Traité des maladies vénérées*, Paris, 1855, p. 573.

These precautionary measures are more difficult of execution for workmen, even for those employed in the Government establishments. In Germany, however, according to Davila,* the workmen in some of the large manufactories are examined every month by a physician who certifies that they are free from any contagious disease. We have already said that the men employed in the glass-works in the neighbourhood of Lyons have, of their own accord, asked to be examined for the purpose of protecting themselves from a contagion to which they are liable. Strictly speaking, then, it would be but a slight infringement of the liberty of the individual to subject to examination the numerous workmen employed in mines; these examinations and many others would, at the very least, be useful for the generality. But, according to some physicians, the measures to be taken in reference to men should not stop here.

As early as 1480, ancient regulations† were in force that persons keeping licensed houses in London should cause to be examined not only the prostitutes therein, but also the men who frequented them, and since then some syphilographers have thought that the best means of reaching the sources of syphilis would be to examine the men who have connection with prostitutes. Diday, who has paid great attention to everything which concerns the prophylaxis of syphilis, asks for a police regulation obliging the keepers of licensed houses to examine the men presenting themselves there, and not to admit them until they have been ascertained to be healthy. This measure, long carried out in Hamburg,‡ in spite of the difficulties of its application, appears to furnish good results.

Bourru, almost a century ago, asked that those who did not scruple to communicate syphilis and to infect a multitude of persons, should be severely punished. Punishment is therefore regarded as justly due. If considerable indemnities are sometimes, and with good reason, granted to nurses contaminated by syphilitic children, why should not a fine be imposed upon the individual who voluntarily transmits the disease with which he is affected? I admit that such a measure might occasion false accusations, but these would be easily detected, and there would be nothing to prevent the punishment from falling back upon the accuser. Sanitary visits and punishment

* *Loc. cit.* p. 23.

† Lagneau, *loc. cit.* p. 62.

‡ See Parent-Duchatelet, *De la prostitution dans la ville de Paris*, 3^e édit. Paris, 1857.

are, then, the means which an intelligent administration might oppose to syphilitic contagion by men.

MEASURES RELATIVE TO PROSTITUTES AND OTHER WOMEN.

"To mitigate for the present the ravages of syphilis and to make it disappear, probably, in the end," writes Parent-Duchatelet, "the first and most indispensable condition is, to watch over the health of the individuals placed under the circumstances most favourable to its propagation; these individuals are evidently prostitutes." Prostitution is the great source of syphilis. From statistics by Puche and Fournier* we learn that out of 873 cases of transmission of syphilis there are—

Public prostitutes	625
Clandestine prostitutes	46
Kept women, actresses, &c.	52
Workwomen	100
Servant women	26
Married women, wives of syphilitics	24
	<hr/>
	873

Although the figures in reference to prostitutes are here probably somewhat high on account of particular conditions, since it is a question of observations made in special hospitals in which public women abound, prostitution is none the less one of the most frequent causes of syphilis; it is also one of those for which it is possible to find a remedy.

In France, the manner in which the examinations are made is not the same in all the towns. In Paris, the women in licensed houses are seen every week, those living in their own rooms twice a month, the speculum being used every other time. In Bordeaux, the examinations take place once a fortnight, and the use of the speculum is exceptional; at Marseilles and at Rheims the examinations are weekly. Daily observation shows that want of strict legislation and insufficient visits are the weak points of this organisation. In fact, we are forced to admit that, in this respect, Brussels and Hamburg are in advance of Paris. In both those towns the public women

* Alf. Fournier, *De la contagion syphil.* Thèse de Paris, 1860.

are examined twice a week, and the use of the speculum is always obligatory.

Moreover, the too great number of women to be examined, and the little time which it is possible to devote to each of them, are disadvantages which tend to render our sanitary measures to a great extent illusory. Let us add that as the examination takes place shortly after the arrival of the women at the dispensaries, they do not fail always to remove by washing and astringent injections the product of secretion indicative of the contagious lesion. Under these circumstances, only a comparatively slight security is ever obtained.

Numerous reforms have been proposed, one of the chief of which is an increased number of medical visits. Ricord, Ratier, Sandouville, and Davila, are of opinion that these visits ought to take place every three or four days; but this interval of time is, doubtless, still too long, if we would combat the disease vigorously and strive to make it disappear entirely. Multiplying the visits is not enough; it is important to prevent deception and to avoid everything which may render difficult the medical diagnosis, which purpose can only be effected by keeping the women for some hours in a place devoted to that object. An essential point, and one upon which Guichard and Davila have already insisted, is, to examine not only the genital organs, but also the skin, the mouth, the throat, the anus, &c. Since it has been admitted that secondary lesions are contagious and that they produce infection more frequently perhaps than the primary lesion, this examination has become indispensable. In like manner, in hospitals, an important point is not to leave prostitutes free immediately after the disappearance of the primary lesion, since, when the period of secondary affections supervenes, these women become a fresh source of contagion. What is to be done here? "Two methods present themselves," says A. Fournier, "either to keep in hospital and treat every syphilitic prostitute during a time sufficiently long to ensure a cure within the limits of possibility, or, after a longer or shorter time, to place her at liberty, but to keep her under special observation. This second means, which is the easier to effect, would necessitate the attendance of the woman every second or third day at a dispensary, after which, if she was found to be again affected, she would be sent into hospital again."

Similar measures are applicable to women licensed in their own

rooms. As regards workwomen and married women, there are great difficulties; but it suffices to meet the evil at its source, that is to say, in the houses of prostitution. Moreover, punishment of the man who willingly transmits syphilis to a poor workwoman, would be a powerful adjuvant. Thus, to watch closely prostitutes in licensed houses and in their own rooms, to oblige them to undergo, every two days at least, a strict examination, to detain all such as are suspect and not to set them at liberty, in case of undoubted syphilis, until they have passed the period of secondary affections, are the measures indispensable for diminishing the frequency of syphilis, if not for putting an end to its existence. What it is important to bear in mind is, that syphilis will not cease definitely to exist until prostitution shall everywhere be subjected to regulations sufficiently strict.*

MEASURES RELATIVE TO NURSES AND NURSINGS.

The great development given above to the contagion of syphilis in suckling shows the whole importance of the hygienic question at

* Works on prostitution have increased in number to a surprising extent. The following have appeared in France since the publication of this work : —Didiot, *Études statistiques de la syphilis dans la garnison de Marseille*. Marseille, 1866. Garin, *De la police sanitaire et de l'assistance publique dans les rapports avec l'extinction des maladies vénériennes*. (*Gaz. méd. de Lyon*. Lyon, 1^{er} juin, 1866.) Lefort, *Critique du travail précédent dans, Gaz. hebdomadaire de médecine et de chirurgie*. Paris, 1866, p. 433. Bergeret, *De la prostitution et des maladies vénériennes dans les petites localités*. Ann. d'hygiène publ. et méd. légale, 2^e série, t. xxv. p. 348. Lecour, *De la prostitution et des mesures de police dont elle est l'objet à Paris, au point de vue de l'infection syphilitique*. Arch. de méd., 1867, t. ii. pp. 711, 736. Jeannet, *De la prostitution dans les grandes villes au xix^e. siècle, et de l'extinction des maladies vénériennes*. Paris, 1868. These various treatises prove clearly the great social interest attached to the prophylaxis of venereal diseases, and especially to their extinction. It is a good sign that this question was brought before the Medical Congress held at Paris in 1867, and that a commission has been formed to communicate with the various European governments for the purpose of enforcing for these diseases regulations stricter than those at present in force in too many countries. What will this commission do, and what will the result of its efforts be? We do not know, but though convinced of the possibility of the extinction of syphilis, we believe that the existence of this disease, like that of many others, will be little compromised until scientific principles shall form the basis of the government of nations. (Note sent for English translation, July, 1868.—TRANSL.)

issue. In this point of view, a double supervision is necessary, as has been pointed out by Cullerier and Bard,* for if the mouth of a child may infect a nurse, the breast of a nurse may also infect the child.

The nurse requires a very close examination. Not only the breasts, the mouth, the pharynx, the cervical glands, but also the genital organs must be examined. Rosen gives the sage advice of examining also any child previously suckled. An exact and careful observer, he was aware that syphilis transmitted by the nurse is most frequently due to a former nursling affected with hereditary syphilis. The physician, who cannot be too much upon his guard against deception, must also not forget that a nurse whose interest it may be to deceive, may very well present a nursling not her own.

For the purpose of preventing this mode of contagion, it has been proposed to establish offices for nurses.† But these offices would require supervision. Lagneau asks for the establishment of special offices, at which it would be forbidden to present a woman if she had not previously been subjected to a close examination, as shown by a medical certificate. In these establishments, thus placed under sanitary supervision, suspicious children could be rejected, says Bouchut, to prevent the infection of mercenary nurses. In this way, healthy nurses, as well as the parents of children recognised as healthy, would have an interest in presenting themselves.

The necessity of examining children about to be sent out to nurse is nothing new. In 1775, the Faculty of Medicine of Paris proposed to impose upon accoucheurs and midwives the obligation to signalise syphilitic children, and to fasten to their arms, before giving them up to the nurses, a ticket which would show their condition as well as that of their parents.‡ Parent-Duchatelet § advised that the state of health of soldiers' children should be ascertained before they were put out to nurse. Lagneau asked whether it would not also be possible to subject new-born children to medical examination, either at the time of registering the birth, or two or three months later.

* Cullerier et Bard, *Dictionn. des sciences méd.* Paris, 1821, t. liv., art. *Syphilis*, p. 144.

† See Marc, *Dictionn. des sciences méd.* Paris, 1813, t. vi. p. 305, art. *Copulation*.

‡ Marc, *loc. cit.* p. 303; et Lagneau, p. 269.

§ See also *Journ. de Médecine, de Chirurgie, et de Pharmacie*, &c., t. lxxvi. p. 494, 1788.

The family, under these circumstances, would receive from the physician a certificate which every director of an establishment for nurses would be obliged to ask for before presenting a woman to suckle the child. Lastly, the director would require also supervision by the physician of the locality into which the child was sent. In this latter respect, Ricordi* expresses the wish for a regulation which I cannot do otherwise than approve: to give instructions to the physicians to examine twice a week all nurslings sent into their districts, and to establish a sanitary line to prevent the propagation of the contagion whenever it should develop itself in one of the children. Lastly, the arrival of a nursling to be notified to the mayor, who would inform the physician thereof. What would then become of those unfortunate beings affected with a disease of which their parents are the authors? If it were ascertained that the mother was syphilitic, there would be no reason, her health permitting, why she should not suckle her child. In the opposite case, the child ought to be brought up by hand, as is done, according to Diday, by the women to whom syphilitic children are entrusted from the hospitals, either with ordinary feeding-bottles, or with Professor Wurzer's nipple-caps. With the aid of the latter, the child sucks the milk in proportion as the nurse draws it by means of a tube with which the instrument is furnished.†

In any case, the nurses ought to be informed of the danger which may accrue to them, as well as to their children and to the persons who associate with them. It is important that their nipples should be cauterised whenever they become excoriated, all contact with an ulcerated part of a nursling presenting any manifestation of syphilis should be carefully avoided.

Lastly, a question of the highest interest, and to which every physician will probably have to give an answer at least once in his life, presents itself. An individual who has had syphilis, and who wishes to marry, asks whether or not he is in danger of begetting diseased children. The answer to such a question is, as will easily be understood, most delicate, for if, on the one hand, it is a question of preventing the procreation of a degenerate race, it is important, on the other hand, to avoid interfering with an arrangement which may form the happiness of a whole life. According to Diday, every

* *Sifilide da allattamento*. Milan, 1865.

† See Lagneau, *Ann. d'hyg. publ. et de méd. légale*, 2^e série, t. v. p. 274.

individual affected with primary or constitutional syphilis, if he has not undergone any general treatment, ought to be declared unfit to marry. "In my opinion," says that physician,* "this is a matter of conscience which admits neither of infraction nor concession." Now that he knows that syphilis may be cured without treatment, the great Lyons syphilographer would not hold, I imagine, a language so absolute; the truth is that, in such cases, there are distinctions to be made. It is certainly the duty of a physician to forbid marriage whenever the primary lesion or secondary affections exist; but, if several years have elapsed since the cessation of these symptoms, and if the patient, thoroughly recovered, is in the enjoyment of perfect health, although it may not always be prudent to advise marriage, we are not called upon to forbid it absolutely, for the chances of cure are more numerous after multiple lesions than if there had been nothing but an indurated chancre. In the case of tertiary manifestations, the physician ought first to treat the patient, reserving the right to authorise marriage afterwards, if the cure appear to him to be complete.

For the rest, a physician cannot exercise too much prudence under such circumstances, in which, in the absence of certain signs, the guarantee of the cure is always impossible.

§ 2. *Private hygiene.*

Private hygiene of venereal diseases, equally with public hygiene, has long occupied the attention of legislators and physicians. There are few medical treatises which do not say a few words at least on this subject. Celsus speaks of it at great length. Lanfranc (1290) advises washing the penis with vinegar and water as a prophylactic measure against the affections occasioned by connection with dirty or diseased women. Armand de Villeneuve, Guillaume de Salicet, and Nicholas Massa propose the same measure.† Fracastor, in his

* *Traité de la syphilis des nouveau-nés, &c.*, 1855, p. 330.

† "Si vero quis cum infecta muliere coire voluerit, quod fatuum est, lavetur vulva cum vino aut aceto, et membrum virile cum aceto. . . ." This washing was to take place before the act; the process to be adopted after the act was: "Quod si forte quis cum muliere infecta coiverit, laventur partes illæ post coitum cum vino albo calido, vel cum aceto, quod mihi magis placet, ut fiat confortatio membri et prohibitio corruptionis ad illam malam qualitatem, et sic stet in suo robore membrum confortatum." Nic. Massa, *De morbo gallico (Aphrodis., t. i. p. 52)*.

poem, praises lemon-juice, then frequently used. G. Fallopius speaks highly of lotions with vulnerary fluids, mercury, and guaiacum. Aromatic and alcoholic decoctions were also employed by some physicians. In 1690, Ettmuller advised washing with a mixture of turpentine and wine. Later on, Mahon recommended for the same purpose a solution of alum. Waren suggested, after the act, the application of an astringent ointment, followed by washing and injection with an alkaline solution. Gardanne (1772) proposed a preservative consisting of lime-water, alcohol, and corrosive sublimate. Peyrilhe, Hunter, Fordyce, &c., recommended, like Waren, alkaline solutions. According to Langlebert, Luna Calderon* discovered a preservative the composition of which unfortunately remained unknown. In 1828, Coster advised the employment of chlorine and its preparations. Ricord recommends most of the substances mentioned above, and even chlorinated lotions; acids, alkalies, water, alcohol, wine, and solutions of sulphate of zinc and of lead have all appeared to him to be of some use, but on condition that the virulent pus has not yet entered into the tissues. Langlebert recommends a fluid which is a kind of compound of the preceding; it is a mixture of soft soap, potash, and rectified spirits of wine, with the addition of essence of lemons. A fluid very similar, but more caustic, has been proposed by Rodet, of Lyons; it contains perchloride of iron, chlorohydric acid, and citric acid. Other substances have also been recommended, and especially oils and fats. In reference to their physiological action, these various substances may be ranged in three classes. One class modifies the circulation of the part to which it is applied and tends to prevent absorption; these are the alcoholic and astringent lotions, such as vinegar and water, solutions of tannin, alum, &c. Another, like fats, protects the organs, in the shape of a coating, and thus prevents absorption. The third class, more energetic, consists of substances intended to destroy the poison, some of which, at least, are active enough to serve as caustics, as, for instance, the preparation recommended by Rodet, of Lyons.

What is to be said of these substances, except that there is not one of them which can be regarded as an absolute preservative. Each of them has, however, peculiar advantages, a relative utility,

* Luna Calderon, *Démonstration de la prophylaxie de la syphilis*, Paris, 1815.

and special indications. Thus fatty substances, which keep up the suppleness of the parts and tend to prevent absorption, will be used with good effect by the male before the act, and by nurses before giving the breast. Alcoholic solutions, acids or alkalies, and especially Bully's preparation of alcohol and vinegar, which are most commonly used, may be employed at any time, and if a solution of continuity be observed, caustics should be applied. In the absence of those which we have pointed out, a stick of nitrate of silver might be used. Advantageous so long as absorption has not taken place, these various substances are evidently useless when a chancre exists. Let us mention, lastly, phenic acid, an agent which, according to one of our greatest scientific authorities,* appears capable of neutralising a certain number of poisons, and especially the poison of syphilis; but no case has yet been brought forward in confirmation of this opinion.

The question up to what moment it is possible to neutralise the poison of syphilis *in situ* appears soluble by analogy, if it be admitted that this poison does not behave otherwise than the poison of hydrophobia, glanders, cow-pox, or even animal poisons, such as that of the viper. Renault d'Alfort, having cauterised the inoculation wound some hours, and even one hour after the insertion of the virulent matter of glanders or of *clavelée*, did not prevent the development of those diseases. Bosquet and E. Rousseau have made analogous observations; the former in reference to cow-pox, the latter by inoculation with the poison of the viper. There is reason to believe, therefore, that the efficacy of therapeutic agents destined to neutralise *in situ* the poison of syphilis is necessarily proportionate to the rapidity of their application, for the absorption of the morbid principle is prompt, and once effected, such agents are inefficient.

Such are the means which everyone may employ for the purpose of defending himself against syphilis. These means, as we have already stated, are in nowise certain preservatives, and have no other action than that of diminishing the chances of infection in an individual who exposes himself to the danger of contracting syphilis.

Certain other measures which it is scarcely necessary to mention have also been pointed out, I mean syphilitic inoculation and pre-

* Chevreul, *Considérations sur l'histoire de la partie de la médecine qui concerne la prescription des remèdes*. Paris, 1865.

ventive syphilisation. The former of these methods, which consists in inoculating the blood taken from the neighbourhood of tertiary lesions, was formerly proposed by Diday; but it has since been given up by that author himself, and no one, so far as I know, has ever thought of putting it in practice. Neither has preventive syphilisation found more favour. We shall speak, further on, of curative syphilisation.

CHAPTER II.

TREATMENT.

§ 1. *Of the various methods of treatment employed up to the present time.*

RATIONAL OR METHODICAL TREATMENT.

THE first manifestations of the syphilitic epidemic of the fifteenth century, having been a complete surprise for the physicians of that period, were not treated at all. It was considered disgraceful for a practitioner to occupy himself with such a disease. But, let us add, the omission had its more especial cause in the complete ignorance of a new disease, unknown to Hippocrates, to Galen, or to Avicenna. "The learned," relates Gaspard Torella, "avoided treating this disease, being persuaded that they knew nothing about it. . . . For," adds the same author, "since this strange disease had never been seen up to our time, no one, however clever, however experienced he might be, could treat it according to the rules of art. . . . It is for this reason that druggists, herbalists, and impostors of all kinds, still boast of curing syphilis completely."* Under these circumstances, remedies as dangerous as they were singular were employed; the abuses were so great, the disease going on increasing meanwhile, that physicians at last became ashamed of neglecting their duty, and thus, says Astruc, shame rather than the hope of success made them undertake the treatment of this scourge. Guided by the theoretical ideas of the period,† they instituted a treatment at once rational and methodical. Strict diet and a very healthy regimen, consisting of food easy of

* See *Aphrodis.*, t. i. Compare: Wendelin Hock, *Tract. de morbo gallico*, cap. i. Jean Almenar, *De lue venerea*. Pavia, 1516. Ulrich de Hutten, *De curatione morbi gallici per administrat. ligni guaiaci*, caps. i. et ii., 1519.

† Consult, in *Aphrodis.* Luisini, the treatises by Nicol. Leoniceus, Conradi Gilinus, G. Torella, Seb. Aquilanus, Jac. Catanée, Wendel, Hock, Bened. Victorius. See also the treatise quoted by Astruc, t. ii. p. 78.

digestion, formed the hygienic treatment. Bleeding* according to the age, strength, and temperament of the patient; leeches or cupping, laxatives or mild purgatives, cataplasms with the purified juice of wild chicory, bugloss, &c.; syrups composed of the same juices, together with baths and various kinds of ointments, were the means employed in the treatment of syphilis. Let us add to these means, when the disease was obstinate, sweating in stoves or even in a moderately warm oven, a means to which Gaspard Torella gave the preference when it was a question of curing pains and pustules. Some physicians, few in number it is true, made use of decoction or infusion of vipers, others, lastly, frequently had recourse to the application of a cautery to the head, arm, or leg.

From that period, however, began the use of a medicine which has become celebrated in the history of syphilis, I mean mercury. Introduced into therapeutics by the Arabs (Rhazes, Avicenna, Mésué, &c.), this agent was employed against lice, the itch, impetigo, the *malum mortuum* (Theodoric), a kind of lepra, and other cutaneous eruptions.† Analogy naturally led to the employment of it for syphilitic eruptions. Encouraged by earlier writers, the first syphilographers followed therein the precepts of Celsus, who recommended, in case of the appearance of an unknown disease, to observe what disease it most resembled and to try remedies similar to those which had several times cured the latter. It is thus that Conrad Gilinus (1497), J. Widmann,‡ Torella, Sebastianus Aquilanus, Ant. Benivenius, Wend. Hock, J. Cataneus, Angelus Bologninus, and others, were induced to propose various mercurial ointments. Bé-ranger de Carpi and Jean de Vigo were, nevertheless, the two great supporters of treatment with mercury. At the very first the effects of this agent were dreaded, and the doses given small: there was scarcely one-fortieth part of mercury in the ointment used by Gas-

* On this point consult: Antonii Benevenii, *De morbo gallico tractatus*, &c. (*Aphrod.*, t. i. p. 401). Leonardi Botalli, *Astensis, medici regii, Luis venereæ curandæ ratio* (*Aphrodisiacus*, t. ii. p. 865).

† It was from the Arabs, in fact, that came the saracene ointment, the formula of which is to be found in Guy de Chauliac (*Chirurg. magnæ Tract.*, doct. i. c. 3).

‡ Widmann dictus Meichinger, *Tractatus de pustulis quæ vulgato nomine dicuntur Mal de Frantzoes*. Argentorati, 1497. See, for other authors, *Aphrodisiacus* de Luisinus.

pard Torella.* The ointments used by other physicians of that period contained one-fourteenth or even one-eighth of the same substance. The empirics also had recourse to mercury; but, less restrained by the fear of causing injury, they contributed gradually, by their excesses, to bring that drug into discredit. In fact, the patients, worn out by strong and repeated frictions, sometimes perished from the action of the remedy,† and those who had sufficient strength or good fortune to resist its violence remained exhausted by salivation, diarrhœa, ulcers of the mouth, &c., or only recovered their health after a long time and great and continued sufferings. The remedy soon became worse than the disease, and the method of treatment fell into discredit, to which the discovery of a new medicine, guaiacum, in 1517, further contributed. From that time dates, in fact, the famous discussion concerning the advantages and disadvantages of mercurial preparations, which has continued to our own time, and which has very recently received a fresh impulse. In the sixteenth century, as in our own days, people were not content to point out the dangers of mercury; they sometimes accused that agent of causing the severest manifestations of syphilis, or regarded it as capable of doing so. “Occasiones tumorum proveniunt a visceribus affectis,” wrote Fallopius,‡ “sed, ut in pluribus, post inunctionem hydrargyri, qui non sanarit ægros. . . . Cum inungantur partes illæ, imbecilles redduntur, et morbus petit loca illa.”

The following passage from Ulrich de Hutten shows plainly enough the abuse made of the drug in question. “The ointment,” he says, “caused such profuse salivation, that the patients were in danger of losing their teeth unless care was taken to prevent that result. The throat, the palate, and the tongue became ulcerated;

* Gaspard Torella, although an advocate of mercury, attributed the deaths of Cæsar Borgia and that of his brother to the abuse of that medicine (*Aphrodis.*, t. ii. p. 528).

† Fumigations with cinnabar, which were also employed at that period, were not without danger, as appeared from the following passage in Jean Bénédict: Suadeo ut caveas ab empiricorum suffimigiis, in quibus ponitur cinnabaris, tanquam a præsentissimo veneno, et cujus ego fumo vidi periisse quemdam nobilissimum pictorem Bononiæ et mulierem devenisse ad apoplexiam. (*De morbo gallico libellus*, cap. iv.; *De cura morbi gallici*, p. 182).

‡ *De morbo gallico (Aphrodisiacus)*, p. 826).

the gums swelled, the teeth became loose, and there flowed incessantly from the mouth a very stinking secretion." Rabelais was no less explicit in a similar sense.

In the sixteenth century, then, the mercurial and anti-mercurial doctrines already prevailed. At that period syphilis was also treated by the ordinary methods of treatment of other diseases and, to some extent, on the expectant principle and by diet: that is to say, we find, in the germ at least, the various therapeutic measures of which we shall have to speak further on.

TREATMENT WITH SUDORIFIC WOODS, VEGETABLE TREATMENT.

The treatment with sudorific woods marks a period of pause and salutary reaction from the excesses and deleterious consequences of treatment with mercury. Ulrich de Hutten relates how it followed the discovery of guaiacum, the most celebrated of all the sudorific woods used for the cure of syphilis. "A Spanish gentleman, treasurer of the province of Hispaniola, suffering greatly from syphilis, heard from an inhabitant of the country of a remedy which he would do well to employ, and was the first who imported it, though he feared that it would not have the same virtues as in that island." This version appears to allude to Gonzalo Fernandez de Oviedo y Valdez; but, nevertheless, there are great differences of opinion concerning the name of him to whom we owe the importation of guaiacum and the date of that importation. I shall not attempt to clear up this point in the history of guaiacum.* What is certain is, that guaiacum, known in Spain as early as 1508, according to Delgado, reached Italy and Germany only about the years 1517 and 1518.†

* On this subject may be consulted with advantage Bosquillon's notes to the translation of the *Traité de la gonorrhée virulente et de la maladie vénérienne*, by Benj. Bell, t. ii. p. 395. Paris, 1802. Those of Potton, in his translation of the work of Chevalier Ulrich de Hutten on the French disease. Paris, 1865. And lastly, an interesting paper by J. M. Guardia, in No. 49, p. 741, of the *Gazette Médicale de Paris*, 1865.

† On this subject and on the treatment with guaiacum, consult: Delgado, *Del modo di adoperare il legno santo d'India occidentale, ovvero del modo che si guarisce il mal francese, ed ogni male incurabile*. Venice, 1529, in 4to. Nic. Poll, *De cura morbi gallici per lignum guayacanum*, in *Aphrodisiacus*, t. i. p. 242. Léon Schmauss, *De morbo gallico tractatus*. Salisburgæ,

Few remedies have become so rapidly popular. It was soon proclaimed throughout Europe that the *mal de Naples* could be cured by means of a drug furnished by America, and from that time the people, who make strange mistakes in their chronicles, became persuaded that the remedy and the disease had both had their origin in the same country, which, no doubt, contributed to confirm the idea of the importation of syphilis from America. Numerous cures, guaranteed by the physicians of that period, occurred to justify the favour in which guaiacum was held. Ulrich de Hutten and his friend Erasmus were indebted to it, according to Oviedo, for a cure which mercurial inunction had not been able to effect. The former aided greatly in the propagation of this remedy by the publication of a special treatise. Musa, Brassavole, Nic. Massa, Fracastor, and Fernel,* in the sixteenth century; Valsalva, Morgagni, and Boerhaave, in the eighteenth, assert that they had opportunities of observing its good effects.

Before being administered, guaiacum underwent various kinds of preparation. "The most usual manner, formerly, of preparing the decoction of guaiacum," says Astruc,† "was to infuse for twenty-four hours, in a new earthen pot, and in eight, ten, or twelve pints of water, one pound of this wood, cut small or well rasped; having well closed the vessel, it was kept at a steady heat until one-fourth, one-third, or one-half was evaporated, according to the strength and temperament of the patient and the violence of the disease. After cooling, the decoction was strained and kept in well-corked glass bottles. From the same wood a second decoction was made, called 'Bocket.' The first decoction was used as a remedy, the second as an ordinary drink. . . . When the decoction was ready, and the patient had been gently purged and kept on light food for some days,

1518, and *Aphrod.*, t. i. p. 383. Ulrich de Hutten, *De morbi gallici curatione per administrationem ligni guajaci*, in *Aphrod.*, t. i. p. 275. Trad. fr. par Potton. Paris, 1865. Gonzalo Fernandez de Oviedo y Valdez, *Del palo guyacan, o del palo santo*, 1552, taken from *Natural y general historia de las Indias*. Seville, trad. lat. in *Aphrod.*, t. i. p. 352.

* Ant. Musa Brassavole, *De morbo gallico liber* (*Aphrod.*, t. i. p. 658). Nicolas Massa, *De morbo gallico liber*. Venetiis, 1563; et *Aphrod.*, t. i. p. 39. Hier. Fracastor, *De morbo gallico poematum lib. iii.* (*Aphrod.*, t. i. p. 183). Jean Fernel, *De lue venerea dialogus* (*Aphrod.*, p. 610). Ant. Gallus, *De ligno sancto non permiscendo opus* (*Aphrod.*, t. i. p. 455).

† Astruc, t. ii. p. 95, édit. de Louis. Paris, 1777.

he was placed in a warm room and took, early in the morning, eight or ten ounces of the first decoction warm, in bed, and having been well covered up, was made to sweat for two or three hours; having been wiped dry, four hours at least after taking the decoction, he took some biscuits or other light food, and drank abundantly of the second decoction; four hours after this, the same process was repeated. If the patient was too delicate, too emaciated, or too weak to bear such a rigorous diet, he was allowed some bread and chicken-broth and even, after some days, the quarter or half of a chicken roasted or boiled, without salt. This method was employed for about a fortnight, during which time, if the bowels did not act freely, emollient injections were given every two or three days. After a short interval, the same treatment was repeated until the thirtieth or fortieth day. After this, he was ordered to return very gradually to his ordinary mode of life, not taking any wine for a month, or much food, and using the second decoction as ordinary drink."

Such was the mode of employing guaiacum. It appears to us that the preparation to which the patient was subjected, and the strict diet, contributed, at least as much as the remedy, to effect the cure. For the rest, the different form in which guaiacum is administered at the present day sufficiently explains the diversity of its action.

Another wood, which equally came from India, but, according to Astruc, differed from the preceding, was employed at the same time. In France, where this wood, known under the name of *holy wood*, enjoyed a great reputation, both patients and physicians spoke of it only with pious admiration. "Oh, holy wood!" said, in one of his prayers, a patient who felt himself relieved, if not cured, by the effects of this remedy; "Oh, holy wood, art thou not the blessed wood of the cross?" As these woods were dear, there were gradually substituted for them, but without success, ebony, hazel, box, and especially juniper woods, &c.*

The most pompous praises and the recommendation of the two greatest sovereigns of the period, did not suffice to maintain the reign of guaiacum. As early as 1546, Fracastor, writing his prose treatise on contagious diseases, asserted that the decoction ought to be given in stronger doses and for a longer period. Matthiolus held much the same opinion. Guaiacum finally fell into discredit.

* See Brassavole, Jean de Léon, and Scaliger.

About this time (1536 or 1537) cinchona was introduced into Europe and used by the Emperor Charles the Fifth, as related by Vesalius.* It gradually took the place of guaiacum. Then came sarsaparilla and sassafras, and it was soon found that all these plants possessed analogous virtues, and they were finally administered under the name of decoction of sudorific woods. The strict method of giving them at first appearing unfitted for patients of feeble constitution, more food was given and less sweating practised, but the curative virtues of the remedy were lessened. Guaiacum and the other woods soon lost their reputation. In 1564, Fracanziani candidly admits that, the disease having become obstinate and difficult to cure, many very clever physicians had been obliged again to have recourse to mercurial inunction. In the seventeenth century, guaiacum was still in use, but the physicians of the eighteenth century, with few exceptions, abandoned it almost completely, and had recourse to mercury. Astruc declared, like many others, that the sudorific woods were incapable of curing any but local and commencing venereal diseases. Mercury again came into favour. Before speaking of the mercurial treatment, I shall say a few words on the vegetable remedies employed for the cure of syphilis.

Since Fracastor's time, physicians who took into account the vigour of their patients did not always employ the most energetic remedies; feeble persons were put upon the use of certain vegetables. Resins, incense, cannella bark, &c., were used. Later on, saponarius was praised by Sennert, Bartholin, and Stahl. Bittersweet, germander, hyssop, white dittany, and many other plants received more or less merited commendation. Kalm and Bertram extolled the root of the *lobelia syphilitica*, Russell and Cullerier the *daphne mezereum*. Cirillo attributed great advantages to citron, already praised by Fracastor.† He asserted that he saw numerous cures effected by lemons and oranges, fruits which he recommended to be taken in large quantities. It is impossible, certainly, to deny the value of these various substances; but they appear to us, after all, to be only feeble adjuvants.

* *De radice chinae, Epistolæ*, 1556 (*Aphrod.*, t. i. p. 586).

† Sed neque carminibus neglecta silibere nostris
Hesperidum decus, et Medarum gloria citre
Sylvarum.
Ergo ubi nitendum est cæcis te opponere morbi
Seminibus, vi mira arbor Cythereia præstat.

TREATMENT WITH OPIUM AND OXYGENISED SUBSTANCES.

In a work written in 1661 Simon Pauli gives an account of the cure of a case of syphilis by means of opium; but this case was forgotten, and it was towards the end of the eighteenth century only that opium acquired, all at once, a certain celebrity in the treatment of syphilis. In 1779, Grant and Michaelis, physicians in the English armies in America, mention having obtained great results from the employment of that remedy.* Several English,† Swedish,‡ and German§ physicians soon began to employ it under similar circumstances, and appeared equally satisfied with its therapeutic effects.

Convinced that the properties of opium had previously remained unknown because it had been administered too timidly, the advocates of that medicine began, in general, by giving about four grains daily, which dose was gradually increased in the course of three or four months, until it reached forty grains in the twenty-four hours. Under these circumstances, sleep was prolonged, and a drowsiness came on sometimes, from which, however, it was easy to rouse the patients; the bowels generally continued to act, but there most frequently supervened an abundant fœtid perspiration, and a considerable flow of mucous urine. Gherardini,|| Richter, J. Pasta,¶ and many other celebrated practitioners did not recognise any beneficial effects from the use of opium, except that of relieving certain pains which resisted mercury; consequently, the exclusive employment of it was abandoned.

Towards the end of the last century, oxygenised substances, and especially nitric acid, were used for the treatment of syphilis. Struck with the fact that mercury had no effect except in the form

* See *Medical Communications*.

† See Cullen, *Materia med.*, t. ii. p. 354. Pearson, *Observ. on the effect of various articles of the materia med. in the cure of the lues venerea*. London, 1800, p. 57.

‡ A. Tode, *Mém. de la Soc. de méd de Copenhague*, t. i. p. 424.

§ Tuissinck, *De opii usu in syphilide observatio probato*. Leyden, 1785
 Franck's transl. of Weikard on Brownian theory.

|| Gherardini, Appendix to his Italian translation of Fabre's *Traité des maladies vénériennes*.

¶ Pasta, *Nuove Ricerche della facoltà dell' oppio nelle malattie veneree*. Bergamo, 1788, in 8°.

of oxide, Girtanner imagined that the properties of that metal resulted from its great facility of giving up its oxygen to animal substances. Starting from this idea, Scott, of Bombay, and Alyon, of Paris, then Rollo and Cruikshank,* English military surgeons, thought that they could not do better than to treat syphilis with oxygenised substances, which they employed externally as well as internally.

Despite its transient reputation, the treatment with oxygenised substances does not appear always to have been unsuccessful. It seems really to have contributed to the cure of some cases of advanced syphilis. Further on we shall make known the indications proper to it. Nevertheless, it was soon observed that these substances possessed only a slight advantage, and the theory by virtue of which they were prescribed was not well founded. Undergoing the fate of many other remedial agents, they fell into oblivion, but not, however, into complete oblivion, for we see them reappear from time to time, and we shall state further on what benefit may be derived from acids, and especially from nitric acid, in the treatment of certain lesions of the viscera.

TREATMENT WITH MERCURY.

Regarded as a poison and at first excluded from therapeutics, mercury was in use amongst the Arabs and most of the physicians of the Middle Ages. Employed in the treatment of cutaneous affections, it was, as we have already stated, about the year 1497 † that it was applied to the cure of syphilis. Later on, when it fell into discredit, it was not entirely given up, since J. Bethencourt employed it in the epidemic of syphilis at Rouen, and Thierry de Héry, Nicholas Massa, and several contemporary physicians continued to prescribe it. In 1538, Alp. Ferri ‡ asserted that it was necessary to have recourse to mercurial inunction, after having used holy wood without success. Fallopius § related that a young man, whose syphilis had resisted all the foreign remedies, had, at last, been

* Compare : Th. Beddoes, *On the effects of the nitrous acid in venereal diseases*, 1797. A. Schmidt, *Beiträge zu den Resultaten der Versuche mit der Salpeter-Säure bei syphilit. Krankheiten*. Vienna, 1802.

† In a satirical poem by G. Summarissa, of Verona, mention is made of the employment of mercury in 1496.

‡ Alp. Ferri, *De ligno sancto liber, Aphrodis.*, t. i. p. 404.

§ Fallopius, *Lib. de morbo Gallico*, cap. 67.

cured by an empiric, and adds: "I make use of mercury in obstinate and desperate cases, especially when I have already tried other means."

Thus the advantage of mercury over vegetable preparations became recognised. This agent was at first used externally only. There were, says Astruc, four ways of using it, viz., as a plaister or cerate, as a wash, as an ointment or liniment (inunction) and in perfumes (fumigations).

Proposed by Angelus Bologninus, the celebrated plaisters of J. de Vigo rapidly fell into disuse on account of the cutaneous irritation which inevitably followed the employment of them. Mercurial washes were composed, according to Augier Ferrier, one of the first who mentions them, of desiccating drugs and corrosive sublimate dissolved in distilled water. The sublimate was also used for washing and rubbing in a warm place all parts of the body except the chest, the head, the stomach, and the armpits, and that two or three times a day for ten days, according to the strength of the patient and other circumstances. Like the plaisters, the washes soon came to be regarded as dangerous and were banished from therapeutics.

Fumigations, used at the same period, produced similar ill effects in unskilful hands; but it must be stated that they were approved of by Massa, Rondelet, &c. They were of two kinds (Astruc), benignant or malignant, according to the quality of the drugs of which they were composed. The former contained fatty and resinous matters and balms. The latter were made of the same substances with the addition of arsenic or preparations of mercury, such as cinnabar, red precipitate, turbith mineral, or even corrosive sublimate. The patient about to undergo fumigation was first bled and purged, and then put into a kind of well-warmed tent. At his feet was placed a pan of charcoal, and through a hole made for the purpose the substances intended for the fumigation were thrown at intervals, so that the patient remained exposed from head to foot to the smoke which was thrown off, until he perspired freely. If, by chance, the patient was observed to be near fainting, he was allowed to apply his mouth to a hole made for that purpose, or to breathe fresh air through a tube. He was kept in the tent a longer or shorter time, according to the severity of the disease and his strength. The fumigation lasted half-an-hour, three-quarters, or a whole hour, according as the patient could bear it. He was then

placed in a warmed bed and well covered to make him perspire freely for an hour or two; after which, having been well wiped, a glass of wine was given him, and two hours later he had a meal. These fumigations were employed daily or only every three or four days, according to the severity of the disease and the strength of the patient. They were repeated six, seven, eight, or nine times, until salivation or purging occurred, or the symptoms entirely disappeared.

Not until about the year 1535 did P. A. Matthiolus first venture to give mercury internally. He administered it in the form of red precipitate. This agent was soon used in the form of crude mercury and became the basis of the famous pills of Barbarossa, which Francis I. is said to have been one of the first to use in France (1540); then, with the discoveries in chemistry, were seen in succession, sweet mercury (*aquila alba*, *calomelas*, protochloride of mercury), *æthiopa mineral* (black sulphuret of mercury), white precipitate (nitrate of mercury), &c., &c. This time also, physicians, and especially empirics, committed regrettable excesses; convinced that salivation was necessary, the price of health, the only means of eliminating the poison, they sought, above all things, to produce it.

It was not until 1718, says Yvaren,* *i.e.*, two hundred and eighty-four years after the appearance of syphilis, that Chicoyneau, Chancellor of the University of Montpellier, strove to demonstrate the inutility of salivation and to substitute for it, in the complete cure of the disease, the method called that by *extinction*. This salutary reform did not triumph at Paris until long after, and sixty years have scarcely elapsed since it became the common rule. However, despite the use of more moderate doses, mercurial treatment was not yet safe from all reaction. The mercurialists Vigo, Fracastor, Brassavole, Massa, Botal, Rondelet, &c., and the anti-mercurialists Torella, Montanus, Fernel, Fallopius, Tomitanus, &c., reappeared under new names. The therapeutic uncertainties of the sixteenth century are represented in the nineteenth as if to prove our ignorance and slow progress.

The interesting observations of some English physicians, the passionate attacks of Broussais against the morbid specificity of

* *La Syphilis*, by Jérôme Fracastor, trad. fr. Paris, 1847. See for history of the use of mercury against syphilis, Virchow, *Zur Geschichte der Quecksilber-Behandlung in der Syphilis* (*Archiv*, t. xix. p. 238).

syphilis, and somewhat exaggerated fears of mercurial preparations, served all at once, at the commencement of the present century, to call forth again the question of the treatment of syphilis without mercury and to throw doubt upon the good effects of mercurial preparations.

TREATMENT WITHOUT MERCURY.

The treatment without mercury was a kind of revolution in the history of syphilis, and in this respect deserves attention. It was the period in which the ideas of Balfour, Hunter, Adams, and Carmichael concerning the plurality of poisons began to take root in England. France was at war with Spain; Dr. Fergusson, surgeon in the English army in Portugal, having opportunities of observation in the large hospitals of that country, remarked that the mercurial treatment was very little in use for syphilitics. Primary ulcers were combated by local means alone, and it was only in private practice that decoctions of roots and other similar means of treatment were added to the topical remedies. Affections of the throat were treated with stimulating gargles only, and frequently disappeared as quickly as the chancres. Recourse was not had to mercury except for affections of the bones; but these were very rare, and generally so slight that they were regarded as rheumatic, and cured with small doses of calomel, Dover's powder, guaiacum, warm baths, &c. The disease, however, showed more intensity amongst the English, to which appeared to contribute above all a febrile condition caused by the unaccustomed heat of the climate, debauchery, and excesses of all kinds. The disease, in the latter, almost always assumed a phagedænic character, commencing with violent inflammation and fever, and requiring an active and especially antiphlogistic treatment. These various circumstances observed by Fergusson led him to suppose, either that vegetables have more marked antisyphilitic properties in warm climates, or that the disease itself is so mild in Portugal that it may wear out of itself, after having accomplished a certain evolution. Moreover he asserted that he had observed the same benignity in Portugal in reference to small-pox. Although convinced of the curability of syphilis without mercury, Fergusson * did not imagine that what took place in Portugal would

* Fergusson, *Observ. on the venereal diseases in Portugal (Medico-Chirurgical Transactions, 1813, t. iv.)*.

be applicable to England; but his observations gave birth to an idea which already had a tendency to develop itself. Several surgeons set to work, and in a short time the researches of Thomson,* Rose,† and Guthrie‡ demonstrated the possibility of the success of a non-mercurial treatment. Thomson treated all the patients placed under his care, as well in hospital as in private practice, by antiphlogistics and soothing topical applications, and remarked that one-tenth only of those who were subjected to his treatment presented secondary symptoms. Rose observed constitutional symptoms in one-third only of his patients treated without mercury. He never saw caries supervene. The observations of Guthrie agree, in the main, with those of Rose; the proportion of constitutional symptoms appeared to him to be still less; but he admits that he was not able to observe the patients long after they went out.

Further, in 417 cases of syphilis treated without mercury, Hennen observed secondary symptoms forty-six times only. A medical report on the English army by J. McGregor and W. Franklin is still more decisive; it teaches us that, from the month of December, 1816, to the month of December, 1818, 1,940 individuals were treated for primary ulcers of the penis. In this number were included, not only simple ulcers, but also the syphilitic chancres of Hunter. But, of these 1,940 patients, ninety-six only had secondary symptoms, and further, of these ninety-six, twelve patients had taken mercury for special reasons stated in the report. Amongst these 1,940 individuals, affected with primary ulcers, sixty-five were subjected to mercurial treatment. Consequently, if we deduct from the total the numbers sixty-five and twelve, there remain 1,863 cases in which there was a perfect cure without mercury. The mean duration of the treatment was twenty-one days for the patients who had

* Thomson, *Obs. on the treatment of syphilis without mercury*. Edinburgh, 1817, in 8°.

† Thomas Rose, *Obs. on the treatment of syphilis, with an account of several cases of that disease in which a cure was effected by the use of mercury* (*Medico-Chirurgical Transactions*, 1817, t. viii.).

‡ G. Guthrie, *Obs. on the treatment of the venereal diseases without mercury*, *Med.-Ch. Trans.*, t. viii. Compare: J. Bartlet, *Dissert. med. inaug. de syphilitidis tractatione sine hydrargyro*. Edinb., in 8°. J. Hennen, *Principles of military surgery, comprising observations of the arrangement, police, and practice of hospitals, and of the history, treatment, and anomalies of Variola and Syphilis*, 2nd edit. Edinburgh, 1810, in 8°.

no buboes, and forty-five days for those who had. During the two same years, 2,827 patients affected with ulcers on the penis were treated with mercury; the mean time required for the cure was thirty-three days when there were no buboes, and fifty days when there were; fifty-one of these patients had secondary symptoms.

While this revolution was taking place in England, in America Harris, Stevens, and others repeated the same experiments and arrived at the same results. In France, where the physiological doctrine began to be established, the idea of treating syphilis without mercury was necessarily well received. Jourdan, Broussais, Richond des Brus, Dubled, Bobillier, Desruelles, and the elder Devergie appeared as its chief defenders. The publications advocating the simple treatment were numerous; but the statistics given in them are, in general, less complete than those of the English physicians. As in England, the treatment was as follows: rest, emollient applications, cleanliness, diluent drinks and a diet rather lowering than tonic. In Germany, the non-mercurial treatment, first employed by Brünninghausen, of Würzburg, was afterwards carried out on a larger scale by Dr. Fricke, of Hamburg. After having successively tried both methods, that physician declared that the symptoms were more severe and the duration of the treatment longer when mercury was used.

Like the English physicians, Dr. Fricke kept his patients in bed; each of them received daily two ounces of bread, forty-four ounces of water-gruel, and six spoonsful of cooked vegetables.* For women, this diet was continued through the whole duration of the disease; for men, at the end of a fortnight or three weeks, the quantity of food was slightly increased, in proportion as the symptoms diminished in intensity. General bleeding was rarely ordered, but a solution of magnesia in fennel water was given daily. This treatment was employed against primary and secondary lesions, by Dr. Fricke, who, far from repudiating the use of mercury completely, considered it, on the contrary, a valuable and powerful remedy. He also prescribed, however, in secondary syphilis the decoction of the sudorific woods and nitric acid.

Handschuh and several other German physicians also tried the treatment without mercury and obtained analogous results. These experiments were imitated in Italy, Denmark, and Sweden, and it

* See Graves, *Lectures on clinical medicine*.

was asserted everywhere that the employment of the new method rendered syphilitic affections more benignant and less numerous. Let us add, however, that the value of mercury given in small doses and combined with a light diet was never completely denied.

From all these statistics, which were not perhaps always made with complete impartiality or took into account sufficiently the nature of the primary lesion, there nevertheless resulted a useful and fruitful revolution in the treatment of syphilis. Up to that time, in fact, there had been an abuse of mercurial preparations in all primary lesions and even in gonorrhœa, which was regarded as one of these. Often, instead of being cured, the disease was aggravated, it being too readily believed that those symptoms were always followed by constitutional syphilis. The method described by the English physicians proved that, in the absence of a mercurial treatment, syphilitic chancres themselves are less frequently complicated with phagedæna, without being on that account more frequently followed by secondary symptoms.* This method further taught us the valuable lesson that a great number of syphilitic lesions, especially amongst the secondary manifestations, may yield to diet alone, and that mercury is thus by no means a specific, but a simple adjuvant which, under certain given conditions, favours the return to health. In fact, Bennet, taking into account all that had been published on the subject, was able to write:—"The number of experiments which had for their result the undeniable proof that syphilis is cured more quickly, and with less danger of secondary affections, when it is treated simply than when recourse is had to mercurial preparations, now amounts to more than 8,000."† Quite recently, Dr. Drysdale has published a work on the cure of syphilis without mercury to which we refer the reader.‡

Gradually, however, syphilis again came to be treated with mercurial preparations; syphilisation, a new mode of treatment which sprang up some years before, alone continued the non-mercurial plan. But the attacks made upon the employment of mercury were not to cease so soon. The paradoxes maintained by the Broussais school, completely abandoned in France, have been resuscitated a

* See Gauthier, *Examen historique et critique des nouvelles doctrines médicales sur le traitement de la syphilis*. Lyons, 1843.

† *Clinical Lectures on the Principles and Practice of Medicine*. Edinburgh, 1859, p. 59.

‡ Drysdale, *Treatment of syphilis without mercury*.

short time ago in Germany, where Jos. Hermann,* Lorinser,† and some other physicians maintained that there is no such thing as secondary symptoms, and that all the morbid forms usually described under that name are the more or less remote consequences of the mercurial treatment. It is not my intention to enter into the numerous discussions raised by this new war against mercury; let it suffice to say that, thanks to the works of Singer,‡ Waller,§ Overbeck,|| and A. Kussmaul,¶ mercury was this time also found innocent of the crimes imputed to it.** From this discussion, however, resulted a more profound knowledge of the manner in which that agent behaves in the economy and of its elimination.

TREATMENT WITH SILVER, BRASS AND PLATINUM.

Fracastor and some physicians of his time make mention of gold as a means of combating syphilis. A. Lecoq, Gervais, Uçay, Pitcairn, and other authors, have proposed or employed the preparations of gold against syphilis. It is nevertheless to Dr. Chrestien, of Montpellier, that belongs the having made known, and at the same time made popular, the employment of that agent in the treatment of syphilis. Gold finely divided, oxide of gold, purple of Cassius, perchloride of gold and sodium, were the preparations tried by that physician. No season, no temperament interfered with the use of those remedies, and the treatment, which was combined with a simple diet, rarely required to be continued more than two months. Let us add that the experiments made in France and elsewhere did

* *Medicinische Studien*. Vienna, 1855. *Die Behandlung der Syphilis ohne Mercur*. Vienna, 1856-1857. *Studien über Krankheitsformen in Idria* (*Wiener med. Wochenschrift*, 1859, Nos. 19, 20, 21).

† *Mercur und Syphilis* (*Wiener med. Wochenschr.*, 1859, Nos. 14, 15, 18, 20, 26). Compare: J. Keller, *Ueber die Erkrankungen in den Spiegelfabriken zu Sophienhütte, Friedrichsthal, &c.* (*Wien. med. Wochenschr.*, 1860, No. 38).

‡ *Wochenblatt der Zeitschr. der Wiener Aerzte*, No. 11.

§ *Beiträge zur Lösung einiger Streitfragen in der Syphilidologie* (*Prager Vierteljahrschr.*, t. xvi. 1860).

|| *Mercur und Syphilis*. Berlin, 1861.

¶ *Untersuchungen über den constitutionellen Mercurialismus und sein Verhältniss zur constit. Syphilis*. Wurzburg, 1861.

** See Follin, *Mercurialisme et Syphilis*, critical analysis in *Archiv. de méd.*, October, 1861.

not serve to confirm the favourable opinion formed by Percy concerning that method and expressed by him in a report to the Academy of Science.

Dr. Legrand, of Amiens,* also wrote a volume in favour of gold and its preparations. Mercury, he says, does not cure venereal diseases, but gold does ; gold is, therefore, the specific for syphilis. This is evidently exaggerating the effects and misrepresenting the mode of action of the remedy. However the case may be, we find in that work some histories of patients which would seem to bear witness to the utility of preparations of gold for primary or even secondary lesions, if, in reality, such lesions did not frequently become cured spontaneously. There is good reason for believing, however, that gold, like all disturbing means, is not devoid of utility in the treatment of syphilis.

The example once given, a wish soon arose to try all the precious metals. Serres, of Montpellier, proposed the salts of silver and pure silver, from which he stated that he had obtained good results.† In 1840, Dr. F. Hofer‡ recommended for the treatment of syphilis the king of metals, platinum, from which, however, he obtained only doubtful results. Independently of the uncertainty of their action, the various metals of which we have just been speaking are too high in price for it to be possible to use them on a large scale in therapeutics.

TREATMENT WITH ARSENIC, IODINE, AND IODIDE OF POTASSIUM.

We have already said that arsenic formerly served for the treatment of syphilis, in which it was associated with mercurial preparations either in washes or fumigations. Plater,§ as we know, was not even content with dissolving corrosive sublimate in a very small quantity of water, but also added arsenic. That agent did not cease, however, to be regarded as a poison and, as such, was never fairly classed with the remedies for syphilis. Quite recently, it has

* Legrand, *De l'or et de son emploi dans le traitement de la syphilis*. Paris, 1836.

† *Mémoire sur l'emploi des préparations d'argent dans le traitement des maladies vénériennes*. Paris, 1836.

‡ Hofer, *Gaz. méd. de Paris*, Nov. 25th, 1840.

§ See vol. iii. of his *Pratique*, livr. i. chap. xiv. Astruc, *loc. cit.* t. ii.

been highly spoken of in certain cases. We shall revert to this point later on.

Iodine and its compounds had not long entered the domain of therapeutics when they were employed for the cure of syphilis. Inspired by the practice of Girtanner, who gave burnt sponge for venereal ulcers of the throat, Martini, of Lubeck,* conceived, in 1821, the idea of substituting iodine for the sponge, and obtained good effects from it. He quotes several cases of patients affected with venereal ulcers of the throat, and who, after having undergone without success various methods of treatment, rapidly recovered from their ulcers and from the concomitant cachexia. In the course of the same year, Bielt, at the Hospital Saint-Louis, employed iodine combined with mercury successfully against syphilides. In 1824, Richond des Brus employed tincture of iodine internally, in doses of from twenty to forty drops, and externally, in frictions, against gonorrhœa and buboes. In 1831, Lugol published cases of tertiary affections cured by preparations of iodine alone. Thus was the way prepared for a new antisiphilitic agent.

Wallace, of Dublin, has the merit of having been the first to employ iodide of potassium, to fix the doses of it, and to point out the indications for it, whereby he definitively introduced iodine into the therapeutics of syphilis and placed it almost on a level with mercury. He began his experiments in 1832, and gave the results of them in the form of lectures four years later.† 139 patients were observed, of whom six were affected with iritis, six with affections of the testicle, ten with various diseases of the bones and joints, ninety-seven with cutaneous syphilides, and twenty with lesions of the mucous membrane of the mouth, nose, and throat; lastly, three pregnant women were also subjected to the same treatment for the purpose of preserving the fœtus from syphilitic contagion. The preparation employed, *mixture hydriodatis potassæ*, contained eight parts of iodide of potassium to 250 parts of distilled water. Adults took a tablespoonful of this mixture four times a day, *i.e.*, about thirty grains of iodide of potassium.

The success achieved by Wallace soon excited the attention

* *Hufeland's Journal*, April, 1833. Coindet had already proposed (1820) iodide of mercury for combating venereal affections complicated with scrofula.

† See *Lancet*, March, 1836.

of medical men. In England, Judd,* A. Saville,† Winslow,‡ Bullock,§ and R. Williams;|| in France, Trousseau,¶ Ricord,** Payan,†† Gauthier,‡‡ Boys de Loury, and Costilhes; in Italy,§§ Brera, Sperino, Riberi and Gasca,||| and Pellizzari;¶¶ in Germany, Gusman,*** tried iodide of potassium and testified to its good effects. Ricord observed that tertiary lesions were more favourably influenced by this agent than secondary lesions. Deep-seated affections of the skin and mucous membranes, gummy tumours of the cellular tissue, and lesions of the bones, were the manifestations which appeared to him to yield most readily to iodide of potassium. This fact, which was accepted by Trousseau, Sperino, Payan, Gauthier, and several other experimenters, was taught by Bazin; we ourselves have also been led to admit it. It was further ascertained that, by increasing them gradually, larger doses than those used at first by Wallace could be given with safety. By degrees, from fifteen to sixty and even ninety grains of this medicine were given daily; the dose was still

* Judd, *A Pract. Treatise on Urethritis and Syphilis*, 1836, in 8°.

† A. Saville, *London Med. Gaz.*, August, 1835.

‡ Winslow, *London Med. Gaz.*, December, 1835.

§ Bullock, *Edinb. Med. and Surg. Journal*, January, 1837.

|| Williams, in Behrend's *Syphilidologie*, t. ii. pp. 316, 331.

¶ Trousseau and Pidoux, *Traité de thérapeutique et de matière médicale*, t. i. p. 267, 5^e édit. Paris.

** Ricord, *Bull. génér. de thérapeutique*, t. xii., 1837, p. 241; and *Gaz. des hôpitaux*, 1839.

†† *Essai thérapeutique sur l'iode, ou Application de la médec. iodée ou iodurée*. Bruxelles, 1850; et *De l'emploi de l'iodure de potassium*, &c. Paris, 1847.

‡‡ *Observ. pratiques sur le traitement des maladies syphil. par l'iodure de potassium*. Lyons, 1845.

§§ *Des différents agents thérap. employées à Saint-Lazare contre les malad. syphil. et de leur appréciation* (*Gaz. méd. de Paris*, 1847, p. 418).

||| See *Giornale delle scienze mediche*, 1847.

¶¶ *Gazzetta toscana delle scienze medico-fisiche*, 1845.

*** *Medicin. Jahrb. des Österr. Staates*, 1843. Compare: Eberg (of Breslau) *Medecin. Zeitung*, 1836. Hanck and Kluge, *journ. l'Expérience*, July, 1844. Oct. Hocken, *De la valeur comparative des préparations de mercure et d'iode dans le traitement de la syphilis* (*Ann. des malad. de la peau*, t. i. p. 344; and *Gaz. méd. de Paris*, July 27th, 1844). Esparbès, *De l'emploi de l'iodure de potassium contre la syphilis*. Thèse de Strasbourg, 1859. Evrain, *De l'iodure de potassium dans tous les ages de la syphilis*. Thèse de Paris, 1861.

further increased, but without a proportionate augmentation of its therapeutic influence.

Despite attacks occasioned most frequently by changes of doctrine, an experience of three centuries has confirmed, as we know, the value of mercury in the treatment of syphilis, while most of the other methods employed for combating that disease have, in their turns, fallen into complete oblivion. Iodide of potassium, the use of which is very recent, has not had to undergo the same vicissitudes; its good effects are so generally recognised that it is now impossible to refuse it a place by the side of mercury in the treatment of syphilis. Thus two substances, iodine and mercury, are incontestably the chief agents which we are now able to oppose to the ravages of syphilis.

It would be superfluous to insist further upon the methods of treatment hitherto employed for combating syphilis; what we have already said appears more than sufficient to give a glimpse of the multiplicity of remedies and various phases through which the therapeutics of syphilis have passed. I shall remark, in conclusion, that the spirit of system has always had the most deleterious influence upon the manner of treating syphilis, and that at the present day, it is important to recognise that this disease, like all those which attack the human race, calls for expectation or action according to the indications which present themselves. It now remains for us to search out these indications in acquired syphilis and in inherited syphilis.

§ 2. *Treatment of acquired syphilis.*

Syphilis is curable, because it yields to a well-directed treatment; but it is also capable of becoming cured of itself, *sponte sua*, that is to say, without medicines and with the aid of simple hygienic measures. Under our conditions of observation, it is rare to meet with cases of the spontaneous cure of syphilis, for if our patients do not treat themselves, they ask to be treated, and we physicians do not like to take upon ourselves the responsibility of leaving to itself a disease which, after all, is not without danger. But there are countries in which things run a different course, and to become well acquainted with the natural course of syphilis, the best plan is to study it amongst uncivilised people. In fact, the author of the general history of Pirates (Johnson) wrote in 1725 in reference to

the Brazilians :—" Most individuals (men and women) are affected with venereal diseases, but they do not have recourse to any medicines to palliate these affections. The only man who occupies himself with looking after them is an Irish priest, who has no other remedies than a few simples. It is with these plants, the action of which is assisted by the salubrity of the air and a light diet, that the inhabitants conquer the disease, and if there are few who escape the annoyance of a discharge or an eruption, there is not one, at least, who becomes precipitated into the abyss of evils into which mercury has already plunged so many victims."* Livingstone, as we have already stated,† teaches us that, in the centre of Southern Africa, syphilis becomes cured spontaneously. Lesson relates that syphilis does not commit any ravages in the Society Islands and especially at Taïti. The essentially light diet of the inhabitants, who live upon fruits only, and drink nothing but emulsions of the cocoa-nut; the frequent baths, the high temperature, the indolence which makes them avoid fatigue, and the use of the ava root, which intoxicates them and causes them to perspire freely, are, says that author, the most active and efficacious remedies for that disease. In Egypt, syphilis also very easily becomes cured under the influence of a somewhat strict diet, or by very simple remedies, as affirmed by Sonnini and Bruce.‡ According to Leo Africanus, the same was formerly the case in Numidia. It is unnecessary to dwell upon proofs of this kind; there is another not less important one furnished by the history of the therapeutic methods employed for combating syphilis. The numerous patients treated with sudorific woods, opium, &c., and recovering, evidently owe their cure as much to the efforts of nature as to the influence of the treatment, which, at the very most, played the part of an adjuvant; and although there is reason to believe that most of the cures attributed by the English physicians to non-mercurial treatment had reference to soft chancres, rather than to hard chancres and constitutional syphilis, it is at least quite admissible that true syphilis was not foreign to all those cases. Thus the natural course of syphilis in certain countries, the methods of treatment formerly employed, and daily observation,§ show that syphilis

* Graves, *Clinical Medicine*.

† See vol. i. p. 54 of this work.

‡ See vol. i. p. 55 of this work; and *Gaz. méd. de Paris*, 1839, p. 394, *Sur le traitement de la syphilis en Egypt*, by Clot-Bey.

§ Diday, *Histoire naturelle de la syphilis*, 1863, p. 394, gives eighteen

is capable of spontaneous cure, so that an organism modified by the poison of syphilis may, in time, return to its primitive and normal type, without the necessary intervention of active treatment or specific agents. Syphilis, in this respect, does not differ either from small-pox, typhoid fever, rheumatism, or any other disease, and the duty of the physician called upon to treat it consists solely in aiding nature's efforts and favouring the tendency to recovery. Under these circumstances, it is clear that the general treatment of syphilis ought to be expectant: that is to say, the physician must not act upon any theoretical ideas, but only when formal indications exist. How to attain this end, is the point which it now remains for us to examine. For this purpose, let us follow syphilis in its various phases and in its various seats; this is the only way of meeting all the indications which this so long continuing and so multiform disease presents.

PERIOD OF INCUBATION AND OF LOCAL ERUPTION.

The physician, as will easily be conceived, is rarely called upon to treat syphilis during the period of incubation; but yet it may be asked whether even then, in doubtful cases, something might not be done. The satisfactory results at which Professor Sigmund* has arrived are, in this respect, most encouraging. In fact, out of a total of fifty-seven cases of probable syphilitic contagion in individuals who had placed an excoriated part in contact with syphilitic matter, and who, for the most part, were physicians, accoucheurs, nurses, &c., thirty-five were treated by cauterisation of the point contaminated, and twenty-two were left to themselves. Of the thirty-five cauterised from the first to the tenth day, ten became syphilitic, *i.e.*, about twenty-two per cent. Of the twenty-two left to themselves, eleven were attacked by syphilis, *i.e.*, fifty per cent. This difference is still more significant if we take into account only the cases in which cauterisation was performed early. Of the thirty-five individuals of the first set, twenty-four were cauterised from the first to the third day, and syphilis developed itself in three only of these, *i.e.*, twelve per cent.; while of the eleven others who were

cases of syphilis cured without mercury, without relapse, after three years and a half and more.

* *Ueber die Behandlung der ersten Merkmale und Erscheinungen der Syphilis* (*Wiener med. Wochenschrift*, May 29th, and June 1st, 1867).

cauterised from the fifth to the tenth day, seven became syphilitic, *i.e.*, sixty-three per cent. Thus it would appear to result from these statistics that cauterisation ceases, so to speak, to be of use when the contamination dates further back than the fourth day, and that, on the other hand, it may offer great advantages when practised before that time has elapsed. Hence the conclusion that the poison of syphilis is probably not absorbed instantaneously, and that, before producing general infection of the organism, it remains for some time enclosed locally in a circle more or less confined. This is, moreover, to a certain extent proved by the success of the inoculations performed by Wallace, Puche, Lindwurm, and Belhomme. The syphilitic virus being regarded as a poison, some authors have believed in the possibility of combating it directly in the blood. For my part, says Swediaur,* I think it probable that mercurial remedies enter into the mass of the humours, become mixed with the poison, and exercise upon it a direct chemical action, by which its nature and effects are destroyed. This theory, for a long time accepted, still reigned at no remote period,† and even at the present day has some partisans. We everywhere hear it repeated that mercury neutralises the poison of syphilis, and the counter-poison of syphilis is sought for like that of cholera and many others. This would appear to be the result of a false medical education. I think, with Graves,‡ that syphilis and mercury are not, like an acid and an alkali, two opposed forces the simultaneous existence of which is impossible. It evidently cannot be denied that a poisonous substance, whatever it may be, is capable of being neutralised *in situ*; but once absorbed, it also cannot be denied that there is only one means of combating its effects or of preventing the manifestation of them, *viz.*, to produce physiological effects capable of re-establishing the function primarily deranged. But mercury, regarded as a specific agent by the partisans of the neutralisation of poisons, is as incapable of modifying or annihilating the poison of syphilis during the incubation period as it is, later on, of preventing secondary or tertiary affections.§ We must, therefore, have no hesitation in

* *Traité compl. des malad. vénér.*, p. 79.

† Consult: *Journ. de la section de méd. de la Société de la Loire-Inférieure*; and *Gaz. méd.*, 1836, p. 87.

‡ Graves, *Clinical Medicine*, 2nd edit.

§ Crousillard (*Thèse de Strasbourg*, 1863) quotes from several authors,

abstaining entirely from treatment during the course of the incubation of syphilis, consequently no general preventive measures are indicated. When the primary lesion has appeared and syphilis undoubtedly exists,* are we already called upon to commence a general treatment? Or must we defer this treatment until constitutional symptoms present themselves? For my part, answers Ricord,† a well-marked induration suffices to cause me to prescribe a general treatment, and from the first day on which I can discover it, I attack the diathesis point blank. Against indurated or Hunterian chancre, writes Diday,‡ give mercury (the proto-iodide by preference); against chancriform erosion do not employ any internal treatment. Baerensprung,§ on the contrary, formally repudiates mercurial preparations, and recommends against chancre derivatives and sudorifics, especially Russian baths. Under these circumstances, the cure of chancres is tedious and relapses are more frequent; but they occur only in the first months after the infection, up to the fourth month at latest, and are confined to certain superficial syphilides of the skin and mucous membranes. The Berlin syphilographer has never observed tertiary syphilis in patients who had been treated by him and had abstained from using mercurial preparations.

These authorities suffice; but in presence of this divergence of opinions, what are we to do? And first of all, what is to be expected from mercurial treatment at this period? Will it prevent secondary affections? By no means. Martius, Bassereau, Leudet, H. Lee, Bazin, and Gibert, all agree in admitting, after strict observation, that mercurial preparations employed for the cure of primary lesions do not prevent secondary manifestations, and serve, at the most, to retard their appearance. Numerous cases furnished by Diday in his last work, also bear witness to the impotence of mercury

cases of secondary syphilis supervening despite the use of so-called specific therapeutic agents.

* In cases in which a positive diagnosis cannot be formed, it is clear that every conscientious physician should abstain from a general treatment. If the least doubt is left in your mind, says Ricord, I conjure you to defer all specific treatment and to wait.

† *Leçons sur le chancre*, par A. Fournier, 2^e édit. p. 298.

‡ *Histoire naturelle de la syphilis*. Paris, 1863, p. 189.

§ *Exposé de la doctrine de M. le professeur V. Baerensprung (de Berlin) relativement à l'origine et au traitement de la syphilis*, par J. F. Van der Donckt (*Archiv. méd. belges*, analyse dans *Gaz. méd. de Paris*, 1855, p. 587).

for the prevention of general symptoms. A first point, therefore, may be regarded as established: mercury in no way prevents the manifestation of secondary affections, consequently, it does not attack the diathesis as Ricord asserts, and, in this respect, is useless, if not deleterious. But in reference to the primary lesion, what is its action? Baerensprung observed that the duration of the chancre is longer when recourse is not had to mercurial preparations; but the facts upon which he bases his opinion, at the same time that they show that mercury shortens the duration of the chancre, suggest the idea that it facilitates the absorption of the induration. Consequently, mercurial treatment is little suited to the period of local eruption, and is only indicated when a very indurated chancre is slow in being absorbed: mercury may then play the part of a useful adjuvant and be the more necessary the more the lymphatic glandular system is deeply affected. Apart from these conditions, attention to cleanliness most frequently suffices for the treatment of infecting chancre. Thus the ulcer may be washed with spirit and water or tincture of Guaco* and afterwards dressed with a calomel ointment,† or simply with dry lint.

Ricord, as we know, always performs cauterisation on the appearance of the chancre; but from the moment at which it is proved that this lesion is the first phenomenal expression of the modification of the organism, it becomes clear that the abortive method is of no value. If this method has been able to exhibit some success, it was, as Follin very judiciously remarked, because it was employed indifferently against soft chancre and infecting chancre at a period when the distinction between these two forms was not yet known.

Moreover, experience has spoken on this point. J. L. Petit, who at the commencement of his practice excised indurated chancres of the prepuce, afterwards renounced this operation, which he considered useless. Diday‡ did not succeed in preventing constitutional infection in spite of the destruction, by means of carbo-sulphuric or chloride of zinc paste, of chancres of less than three days' or even

* See Pascal, *Du guaco et de ses effets curatifs dans diverses formes du mal vénérien*. Paris, 1860.

† In such cases, Ricord prescribes the following ointment:

Opiate Cerate	30 parts.
Calomel	1 „

Mix and apply three times a day.

‡ See *Gaz. méd. de Lyons*; and *Gaz. méd. de Paris*, 1860, p.333.

only twenty-four hours' standing. On this point there is no doubt: the abortive method employed against the primary syphilitic lesion is, at the very least, useless.

Ferruginous preparations, tonics, and even the water treatment are the means usually indicated by the general condition of the patient, and rendered indispensable by certain complications, such as phagedæna, which is the sign of an unfortunate tendency of the disease which the ancients called *malignity*. Here, however, local treatment becomes necessary; cauterisation is the most certain barrier to oppose to phagedæna. For this purpose, Ricord gives the preference to the carbo-sulphuric paste, and in cases of very large chancres, he advises the use of chloroform to alleviate the pain of the operation. Rollet prefers cautery at a white heat or chloride of zinc paste, with the precautions which we shall point out further on.

In certain cases, however, simple dressing with a solution of the potassio-tartrate of iron* and the same salt taken internally are means which suffice to combat the evil.

In case of inflammatory complication, rest, baths, and emollient poultices will be required. These means will also serve to relieve phymosis and paraphymosis; but if the prepuce or a portion of the glans threaten to become sphacelous, it will easily be understood that we must not hesitate to perform an operation which has not here, as in the case of soft chancre, the disadvantage of reinoculating the venereal lesion. Nothing is more simple, in fact, than to remove the extremity of the prepuce and the chancre which has formed there.

Soft or simple chancre (pseudo-syphilis), the action of which is entirely local, requires only local treatment; but that treatment is of the greatest importance on account of the frequent complications of this lesion and of its unfortunate tendency to spread and multiply itself. Hunter clearly understood what is required in this respect. "The most simple method of treating a chancre," † says he, "consists in destroying or extirpating it. In this manner it is reduced to the

* Ricord prescribes the following solution :

Distilled water 250 parts.

Potassio-tartrate of iron 30 "

Three tablespoonsful to be taken daily. The sore to be dressed three times a day with lint dipped in this solution.

† Hunter does not make any distinction here between soft chancre and syphilitic chancre.

condition of a simple ulcer or wound and becomes cicatrised like all ulcers or wounds of that nature." To reduce a specific ulcer to the condition of a simple ulcer, to transform a wound possessing a special maintaining cause into a wound devoid of any such cause, appears to Ricord to be the proper object of the treatment. Cauterisation, if sufficiently deep, thoroughly fulfils this purpose. It is performed with various substances, such as caustic potash, nitric acid, and by preference carbo-sulphuric paste (Ricord), or chloride of zinc paste (Rollet, Diday*). After having washed the diseased parts, Rollet applies to their surface discs of the caustic, so as to cover them exactly without going beyond them. These discs are retained in their places with lint, strips of diachylon plaister, or bandages, according to the region; they are kept on for one or several hours, according to the depth of the lesions and the effect to be produced. The eschar almost always becomes detached on the third day, and the wound left behind is usually covered with a pseudo-membranous layer which might give the idea that it is still virulent, if a careful examination did not show that the edges are on a level with the floor, and that the whole surface is becoming raised and healing instead of burrowing by ulceration. The advantage of chloride of zinc as a caustic is that it does not cause such intense pain and is not liable to cause hæmorrhage.

While a general treatment suffices for combating the adenopathies of syphilitic chancre, which rarely suppurate, local treatment is almost always necessary for the buboes of soft chancre. This treatment varies, however, according to the period in the evolution of these lesions. At the commencement, so long as no suppuration exists, rest, emollient poultices, baths, and rubbing with mercurial or iodine ointment are the means indicated. The application of tincture of iodine has the disadvantage of causing severe pain. Blisters, employed as abortive means, have sometimes succeeded; leeches, applied for the same purpose, have the great disadvantage, when the suppurating bubo is opened, of serving for its inoculation, if the punctures they produced are not yet cicatrised. Premature incisions, employed for the purpose of preventing peeling off of the skin, are generally hurtful; but when suppuration has taken place

* Consult: Rollet, *Gaz. méd. de Lyon*, December 15th, 1857. Diday, same journal, 1858, Nos. 2 and 4. Dron, *De la méthode destructive des chancres* (*Annales de la syphilis*, 1858). Debaugé, Thèse de Paris, 1858.

and the bubo threatens to burst, we must not hesitate to give an issue to the pus. A single incision by means of a bistoury, is preferable to caustic. The use of a thread seton, as recommended by Bonnafont, is not to be rejected. Let us add that these methods of treatment have the advantage of being suitable for virulent bubo as well as for sympathetic bubo, the diagnosis of which, as we have already stated, is always surrounded with great difficulties.

After the incision, the bubo, ulcerated and transformed into a virulent wound, requires the same treatment as a soft chancre.*

PERIOD OF GENERAL ERUPTION AND OF SECONDARY AFFECTIONS.

The chief therapeutic agent to oppose to the manifestations of this period is mercury. But the local determinations, although imminent, have not yet shown themselves; the patient is not yet beyond the prodromata, he is suffering from violent headache, he feels a general lassitude, vague pains, and a moral prostration which indicate the speedy irruption of the disease. Should mercurial treatment be commenced? By no means, answers Diday, with whom we agree on this point. Rather suspend all treatment with mercury, if already going on, and, paying but little attention to the specific condition, suit your remedies to the chief symptoms.

Give a mild purgative if the tongue be furred, and then give preparations of iron if there be evident chloro-anæmia. Combined with rest, baths, and small doses of opium, these means will most generally succeed in alleviating, if not in combating the disease. Otherwise, according to Diday, recourse must be had to iodide of potassium or sodium to the extent of from fifteen to thirty grains daily.

Diday writes further:—"With roseola—wait. With a vesicular, squamous, or pustular syphilide—give mercury. With a papular syphilide—wait, but watch." To us, who are advocates of the expectant plan in reference to syphilis, this mode of proceeding

* Consult: Bonnafont, *Mém. de méd. et de chir. milit.*, 1854, 2^e série, t. xiii., p. 337. Reboul, *Des adénites vénériennes.*, Thèse de Paris, 1857. Eiber, *Behandlung eiternder Bubonen nach Lebert* (*Wien. med. Wochenschr.*, No. 38, 1860). *Schmidt's Jahrb.*, t. cxiv. p. 199. Weisflog, *Ueber die Brocha'sche Behandlung der eiternden Bubonen* (*Schweiz. Monatschr.*, No. 12, 1860). A Guérin and P. Picard, *Sur le traitement des bubons* (*Bulletin génér. de thérapeutique*, t. lv. June, 1861).

is very seductive. But since it is not clearly proved that rubeolous and papular syphilides are always the indication of a really benignant form, and as, moreover, in the absence of specific treatment, these manifestations may endure for a very long time, we are led to admit that every exanthem distinctly syphilitic calls for the employment of mercury. In like manner, exanthematic eruptions, secondary affections of the eyes, joints, &c., require to be combated by mercurial preparations. Consequently, the presence of a secondary lesion would indicate the use of mercury, except in certain rare cases which will be spoken of further on.

In the absence of these lesions, no indication, no treatment, the preparations of mercury being incapable, as we know, of preventing ulterior affections. But, the indication being recognised, what method is to be preferred? Should the mercury be used internally or externally.

External treatment.—We have made known above the method with mercurial lotions and fumigations. We cannot dwell upon these methods, now justly fallen into disuse. The same does not apply to inunction, which has not ceased to be in vogue in Germany, and which undoubtedly deserves the preference when to the syphilis are added derangements of the *primæ viæ* which render the internal use of mercurial preparations impossible.

Differing already in the composition and quantity of the ointment employed, the method by inunction varies also according to the region in which it is applied. Peyrilhe caused it to be performed upon the surface of the glans, and Cirillo on the soles of the feet. Clare had minute quantities of calomel rubbed several times a day into the inner surface of the cheeks, in the vicinity of Stenon's duct. Baerensprung* and Sigmund, the two chief German syphilographers who give to mercurial inunction the pre-eminence over all other methods of treatment by mercury, adopt a nearly similar process.

As applied by Sigmund,† this method includes three stages: the preparation of the patients, the inunction, and the treatment after the inunction. The preparation of the patient lasts from six to ten days. It is sought to regulate the diet, to remove or modify various affections, such as fevers, diarrhœa, and especially affections of the gums. The skin is rendered more supple by baths, the tem-

* *Annalen des Charité-Krankenhauses*, 1858, vol. vii. p. 2.

† *Die Einreibungen mit grauer Salbe bei Syphilisformen*. Vienna, 1859.

perature of which varies from 86° to 92° Fahr. The inunction is made on both legs, both thighs, the anterior surface of the chest and abdomen, the arms, and the back. It lasts at least twenty minutes each time. It should be performed at night, before the patient goes to bed, and the parts rubbed are afterwards enveloped in linen or cotton cloths. The linen must be changed after each rubbing. The quantity of mercurial ointment used exceeds fifteen grains daily. The inunction is performed from twenty to thirty times. The patients are kept in bed for eighteen hours at a time and allowed but little food, but regard must be had to the anæmic complications which may contra-indicate low diet. At the same time, gargles of corrosive sublimate, alum, or tincture of iodine are to be used according as there is or is not ulceration of the buccal or pharyngeal mucous membrane. The inunction is suspended during the menstrual period; the same thing is not done during pregnancy, however, and Sigmund thinks that if performed early, it may prevent infection of the fœtus. In women recently delivered, two or three weeks are allowed to elapse before commencing the inunction, that the anæmia which generally follows delivery may have time to disappear. Inunction practised upon nurses does not seem to have any influence upon the syphilis of the children they are suckling; it is, therefore, applied also to the children themselves. The cicatrisation of wounds of any kind is not retarded by this mode of treatment. Internal remedies may be employed simultaneously with inunction: Zittmann's or Pollini's decoction, diuretics, narcotics, various preparations of iodine or iron, bitters, or cod-liver oil. The season most favourable for this mode of treatment is the spring or first half of summer.

After the last inunction, the patients take a hot soap-and-water bath (88° to 92° Fahr.) for half an hour. They are still kept some days in bed and made to sweat. They are allowed rather better diet. This treatment is not entirely free from ill effects; cutaneous inflammations are observed and eczema, which is rarely severe enough to necessitate its suspension. Salivation is a more serious result and one by no means to be sought for as was formerly done. Very rarely, however, is this salivation so considerable as to require the cessation of the inunction. Sigmund has several times been obliged to suspend this treatment on account of the existence of profuse perspirations, obstinate diarrhœa, cerebral or pulmonary congestion, hæmorrhages from the nasal fossæ, anus, or uterus, epileptic attacks, and persistent insomnia.

Baths containing mercury in solution always constitute a very unreliable mode of treatment, on account of the difficulty of knowing, even approximately, the dose of the remedy absorbed. As a general remedy, therefore, mercurial baths are to be rejected; but recourse may be had to them when it is desired to produce a local effect, as in the case of obstinate syphilides. The bichloride of mercury is the salt to be preferred; it is used in various proportions and first dissolved in alcohol or ether. Under the same circumstances, fumigations, as already described, may be of use. For these, cinnabar is usually employed. The temperature is gradually increased, but should never exceed 122° to 131° Fahr. The fumigation should be continued for fifteen or twenty minutes and be repeated daily. Such are the external methods employed at the present time;* these methods, it must be borne in mind, have indications and contra-indications with which it is necessary to be acquainted. They are generally suitable for cases of obstinate syphilis which have resisted internal treatment.

Internal treatment.—This treatment is that which is preferred and generally employed in France, except under the peculiar circumstances pointed out above. Numerous preparations are in use, but we shall content ourselves with making known the chief amongst them.

Despite the favour in which it formerly stood, metallic mercury is now given up. Belloste's pills† and blue pills‡ after having enjoyed great celebrity, are almost entirely forgotten. Sédillot's pills are

* Calomel employed in sub-cutaneous injections after M. Scarenzio's plan (*Annali universali di medicina*, 1864), appears to have furnished good results to Dr. Ambrosoli (see *Giornale italiano delle malattie veneree*).

† Belloste's pills:

Take

Metallic mercury . . .	āā	} gr. 0.75
Aloes . . .		
Rhubarb . . .	āā	} gr. 0.30
Scammony . . .		
Black pepper . . .		gr. 0.15

For one pill.

‡ Blue pills:

Take

Metallic mercury . . .		gr. 0.75
Confection of roses . . .	āā	} gr. 1.5
Powdered liquorice . . .		

For one pill.

more generally advised : I have several times seen their good effects in the hands of my teacher, M. Rayer, and I have often had the opportunity of employing them with success.*

To be of use, metallic mercury requires to be given in rather large doses. For the purpose of avoiding this inconvenience, the idea occurred long ago of having recourse to its compounds. That one of its compounds which has had the greatest reputation, as much on account of the good effects which it has produced as of the great authority which dictated it, in a manner, to a whole medical generation, is the bichloride of mercury, or corrosive sublimate. Recommended in the treatment of syphilis by E. Blancard, Melch. Friccius, Hoffmann, and Boerhaave, this remedy was definitely accepted by physicians as a powerful anti-syphilitic since Van Swieten's time,† who regulated the employment of it according to a formula sent to him from Russia by the celebrated Sanchez. The formula prescribed by the Vienna physician has been modified for the purpose of preventing the sometimes deleterious action of the sublimate upon the stomach.‡

Mialhe § combines albumen with the sublimate and has been

* Sédillot's pills :

Take

Strong mercurial ointment	.	.	gr. 1·5
Medicinal soap	.	.	.
Powdered marsh mallow	.	āā	} gr. 1·5

For one pill.

† Van Swieten's drops:

Take

Bichloride of mercury	.	.	12 parts.
Corn spirit	.	.	1,000 "

A tablespoonful to be taken morning and evening.

‡ The following is the new formula :

Take

Bichloride of mercury	.	.	1 part.
Distilled water	.	.	900 "
Rectified alcohol	.	.	100 "

§ Mialhe has given the following formula :

Take

Bichloride of mercury	.	.	15 grains.
Chlorohydrate of ammonia	.	.	75 "
The whites of two eggs.	.	.	.
Distilled water	.	.	30 ounces.

From one to three tablepoonsful to be taken daily.

imitated therein by Baerensprung and Michaëlis. But it is not only in solution that the sublimate is administered, it is also given in the form of pills for the purpose of avoiding the disagreeable taste which it produces and of facilitating secrecy in the treatment.

It is thus that it serves as the base of Cullerier's* and Dupuytren's pills.†

The proto-chloride of mercury, or calomel, formerly much in use, is now much less frequently employed for the treatment of syphilitic affections. The large doses necessary for obtaining its curative effects having the disadvantage of producing salivation or of irritating the bowels, it is now seldom used except as a purgative. Introduced into therapeutics by Biett, the iodides of mercury soon attained a high rank in the treatment of syphilis. After having tried the bin-iodide, Biett ended by giving the preference to the proto-iodide. Later on, Puche† and

* Cullerier's pills:

Take

Bichloride of mercury	1 part.
Wheat flour	15 "
Powdered gum	2 "
Distilled water sufficient to make into a mass, of which gr̄.	

2½ to be taken morning and evening.

† Dupuytren's pills:

Take

Bichloride of mercury	gr̄. 0·18
Extract of opium	" 0·22
Extract of guaiacum	" 0·75

For one pill, two of which to be taken daily.

For children, to whom syrupy medicines are more easily administered, Larrey's syrup may be given:

Take

Cuisinier's syrup	500 parts.
Chlorohydrate of ammonia	} 0·25 to 0·30 parts.
Bichloride of mercury	
Extract of opium	

From one to six tablepoonsful to be taken daily.

† Puche combines the bin-iodide of mercury with iodide of potassium as follows:

Iodo-hydrargyrate of potash	1 part.
Iodine	1 "
Iodide of potassium	20 "
Syrup of wild poppies	473 "

This syrup is well suited for persons of lymphatic constitution, who have reached the end of the secondary period.

Gibert* recurred to the bin-iodide, which they combined with iodide of potassium in the treatment of deep-seated syphilides.

Cazenave,† Ricord,‡ Bazin, and a great number of other physicians make choice of the proto-iodide of mercury for the treatment of superficial syphilides and their contemporary affections. The cyanide of mercury, lauded by Bielt and Parent-Duchatelet, is generally very little used in spite of the advantage attributed to it by the latter of not producing pain at the epigastrium, like the bichloride.

Such are the various methods and the preparations generally employed in secondary syphilis. To sum up, the employment of mercury internally constitutes a simple and not dangerous method. The bichloride and proto-chloride of mercury are the two compounds to be chosen; but the bichloride is, without doubt, the one which deserves the preference, if it be true that all the preparations of mercury, once absorbed, are first of all transformed into that salt.

However this may be, experience has taught us that it is sometimes necessary, for the purpose of obtaining a more rapid cure, to vary the preparations. I have seen, says Bazin,§ syphilides, favourably modified at first by the proto-iodide, become stationary all at once, although the treatment was continued strictly, and only pre-

* Gibert recommends the syrup of the iodurated bin-iodide of mercury (Boutigny), every 25 parts of which contain :

Bin-iodide of mercury . . .	0.1 centigramme.
Iodide of potassium . . .	50 "

† Cazenave gives, in the twenty-four hours, from gr. $\frac{1}{2}$ to gr. iiij of proto-iodide of mercury, or from one to four or more of the following pills :

Take	
Proto-iodide of mercury . . .	7½ grains.
Extract of lettuce . . .	22½ "

For twenty pills.

‡ Ricord prefers the following formula :

Take	
Proto-iodide of mercury . . .	} 45 grains.
Extract of lettuce . . .	
Extract of opium . . .	15 "
Confection of roses . . .	90 "

For sixty pills, one, two, or three to be taken daily.

§ *Leçons sur les syphilides.* Paris, 1859.

sent a fresh tendency to resolution when another compound of mercury was substituted for the proto-iodide, such as Van Swieten's drops or Dupuytren's pills. The same author begins the treatment of the syphilides with a pill containing gr. $\frac{1}{2}$ of the proto-iodide, and asserts that it is useless to give more than gr. $\frac{1}{2}$, seeing that no advantage is obtained from larger doses.

An important question, and one variously answered, is that of knowing during what length of time the internal employment of mercury is to be continued. Hunter gave a quantity of mercury proportioned to the number of the ulcerated surfaces and the violence of the disease. Dupuytren continued the treatment up to the complete extinction of the symptoms, plus a period equal to that required for the cure. "Six months of mercurial treatment, plus three months of treatment with preparations of iodine," says Ricord, "is the method which furnishes the most permanent cures, and which succeeds, in an enormous majority of cases, in really neutralising the poisonous influence, I may say in curing the syphilis, at least in the generality of its manifestations." This method, however, is not that of all practitioners, and is not that either of Diday or of Bazin. For the physician of the Hospital Saint-Louis, when a resolute syphilide has completely disappeared, it is important to suspend the use of mercurial preparations, to be returned to if a fresh eruption supervene.

No serious reason existing to justify the continuation of the mercurial treatment after the cessation of the local determination, I, for my part, give the preference to Bazin's method. In fact, it is to hygiene much more than to therapeutics that recourse should be had to prevent relapses, to eradicate the disease, and to restore to the organism its normal characters. A special remedy for secondary syphilis, mercury does not on that account suit all cases. A bad condition of the primæ viæ, debility of the organism, and a certain degree of chloro-anæmia, are so many contra-indications which should be taken into account. In persons of a delicate constitution, affected with scrofula, predisposed to phthisis and to other diseases of the same class, mercury should not be given, says Sir Benj. Brodie,* until it has been ascertained to be indispensable. But, adds the same observer, I believe that scrofulous subjects who have a well-marked syphilitic affection are treated with more advantage

* See *Ann. des malad. de la peau et de la syphilis*, t. ii. p. 90.

by the aid of this medicine, for if the mercury be deleterious for them, the syphilis is still more so. Individuals who have all the appearances of vigorous health are not always those who best support the preparations of mercury. Those who are in the habit of drinking much wine and who lead an irregular life, place their constitutions in a condition little favourable for the employment of those preparations; with them, it is better to defer the use of mercury until the constitution has been improved, so as to avoid having to combat, later on, mercurial and syphilitic affections. Sometimes, for reasons which could not be foreseen, mercury acts as a poison; for this reason we must carefully watch all those to whom we administer this drug, if they have not taken it before. In short, far from exerting a favourable action, and effecting the cure of secondary affections, mercury may disturb the general health and aggravate the manifestations of the disease, in proportion to the quantity in which it is given. Under these circumstances, the use of it must be suspended. The patient will soon improve, and later on it will often be possible again to have recourse to this remedy, and this time with more success. In like manner, mercury ought not to be continued when, after the period necessary for its action, it does not manifest any therapeutic effect. A suitable hygiene, combined with tonics, then becomes useful, as also the employment of certain mineral waters and the water cure.

If the phenomena of chloro-anæmia be added to the syphilis, preparations of iron, exercise in the open air, sea air, and salt-water baths, are so many excellent adjuvants. All abuse of spirituous liquors, too stimulating food, or great fatigue, should be most carefully avoided. To place the organism in suitable hygienic conditions is the best mode of preparing it for the successful employment of remedial agents. In case of a furred condition of the alimentary canal, patients derive benefit from emetics, which enable them better to support mercurial preparations. Amongst the local applications capable of aiding the general treatment are alkaline, sulphur, or corrosive sublimate baths, astringent, tonic, and antiseptic lotions, and cauterisations, if ulcers more or less deep exist. Mucous patches, relapses of which are so frequent, readily yield to slight cauterisation with nitrate of silver, chlorine lotions, or the application of calomel in powder.

Let us point out also the use of certain well-known drinks, to which however we must take care not to attach too much import-

ance: such are the decoctions of Vigarous, Zittmann, Pollini, and Feltz.* The latter, recommended by Rayer, appears to me more suitable for the tertiary period, on account of the small quantity of arsenic which it contains.

PERIOD OF GUMMY PRODUCTS OR OF TERTIARY AFFECTIONS.

While the secondary manifestations of syphilis rarely require any other than a general treatment, the tertiary lesions, more deep-seated and more persistent, generally require further the employment of a local treatment. The hand of the surgeon may be called in to combat them or at least to remedy the functional derangements which they occasion or which they leave behind them. We shall have to take into account these various circumstances. Iodine is here the basis of our treatment, as was mercury in secondary syphilis. Administered first of all by Martini, of Lübeck, and by Lugol, the tincture of iodine has recently been lauded afresh by Dr. J. Guillemin,† who recognises in it, amongst other advantages, that of being moderate in price, almost incapable of adulteration, and little or not at all dangerous in its use. The doses of it are very small compared to the usual doses of compounds of iodide; that employed by Dr. Guillemin is the following:—

Tincture of iodine	.	.	.	5 parts.
Common water	.	.	.	1,000 „

Two or three spoonsful of this solution before each of the two chief meals of the day suffice in general, according to that author, to combat not only tertiary, but even secondary affections.

Iodine, nevertheless, is seldom given uncombined; recourse is most frequently had to one of its salts, and then the preference is given to the iodides of potassium and sodium. But if the iodides are not dangerous to the organism, except in large doses, the same does not apply to the iodates, and consequently we must avoid the

* These various drinks are decoctions of sudorific woods and sarsaparilla. Those of Vigarous and Pollini contain sulphuret of antimony, that of Zittmann, calomel, that of Feltz, sarsaparilla, isinglass, and sulphuret of antimony.

† *On the advantages of the substitution of iodine for iodide of potassium in the treatment of syphilitic diseases* (*Gaz. hebdom. de médecine et de chirurgie*. Paris, 1866, p. 134 et seq.).

production of those salts in the administration of the iodide of potassium or sodium. But the recent researches of Vée (see *Bulletin générale de thérapeutique*, t. lxxi. p. 405) show that chlorate of potash, absorbed simultaneously with iodide of potassium, may yield to it its oxygen and convert it into iodate, a poisonous agent. Experiments by Melseus prove the possibility of such poisoning, and therefore we must avoid giving chlorate of potash to a patient who is taking iodide of potassium.

The doses in which iodide of potassium is given vary from seven and a half and fifteen grains to forty-five, sixty, and seventy-five and ninety grains in twenty-four hours. Some practitioners carry the dose to 150, 180, and 225 grains, or even more, but without advantage to the patients, for, with iodide of potassium as with all medicinal agents, the organism cannot utilise more than a given quantity. Moreover, experience has shown that, under these circumstances, the therapeutic influence of the remedy is never in proportion to the doses taken, and that the pathogenic effects alone are increased. The object of the physician in such cases is, therefore, to arrive gradually at a dose which produces therapeutic effects without producing pathogenic effects injurious to the patient. This salt is taken in solution, or in syrup, but very rarely in pills, on account of its deliquescence. The best mode of administering it is, to incorporate it, once dissolved, with tonic or depurating syrups, such as syrup of gentian, saponaria, quassia, sarsaparilla, &c., Ricord * gives this remedy in the following form :

Take

Syrup of gentian . . .	500 parts.
Iodide of potassium . . .	30 „

Three tablespoonsful to be taken daily.

Melchior Robert substitutes syrup of sarsaparilla for the syrup of gentian. The larger doses of iodide of potassium are indicated in the case of advanced and deep-seated lesions, such as changes in the bones, or visceral localisations which may place the life of the patient in danger. But if the affection does not extend beyond the external or internal tegument, and especially if the patient finds himself in that stage of the disease to which certain authors have given the name of transition period, the mixed treatment, as em-

* *Leçons sur le chancre*, 2 édit.

ployed by Gibert and Bazin,* is the best means of removing these symptoms. The bin-iodide of mercury, combined with iodide of potassium, or syrup of the iodurated bin-iodide of mercury (Boutigny, Gibert), is the preparation to be employed with most advantage against deep-seated, tuberculo-ulcerative and puro-vesicular syphilides, affections for the most part very obstinate. Like mercury, the iodide of potassium destroys the manifestation, but does not prevent relapses, and consequently does not affect the diathesis. The space of time during which it is desirable to continue the use of this medicine is, for some authors, from two to three months; but those authors too readily forget that no absolute rule can exist on this point, and that the constitution of the patient, his general state of health, and the greater or less tenacity of the manifestation, are then the only guides. It is evident that, when the local morbid determination yields readily, it is not necessary to continue the use of the remedy long; in the opposite case, the use of it must be continued until the general health is restored, especially when the lesion is a deep-seated one, a circumstance which renders it difficult to seize the exact moment of its complete disappearance.

The iodide of iron in pills, or still better in syrup, will be substituted with advantage, in debilitated persons, for the iodide of potassium; we shall return to this subject further on, when speaking of the treatment of hereditary syphilis. Like the mercurial preparations, the preparations of iodine require to be assisted in their action, whenever the patients present a certain degree of cachexia, or of simple anæmia. Bitter drinks, infusions of cinchona, Bordeaux wine, the juice of meat, roast meats, and even preparations of iron † become, under these circumstances, more or less necessary.

* We have already given Gibert's formula. The following is that to which E. Bazin gives the preference :

Take

Bin-iodide of mercury . . .	0.15 parts.
Iodide of potassium . . .	10 "
Syrup of saponaria . . .	500 "

Two tablespoensful of this syrup are given daily at first and afterwards increased to four.

† The preparations of iron have not been regarded as adjuvants only. H. Behrend (of Liverpool) has advised the internal use of potassio-tartrate of iron (*Lancet*, December, 1856), from which he asserts that he has obtained complete success. Side by side with those who give the preparations of iron are found others, like Marsden, who content themselves

The deranged digestive functions sometimes require to be treated separately; but it is important to know that one of the chief means to be opposed to intestinal derangement, especially if dependent upon a material lesion of the hæmopoietic glands, is treatment with preparations of iodine. In short, the contra-indications for this treatment are comparatively rare.

Under circumstances which experience alone suffices to determine, iodide of potassium, even in large doses, remains without effect upon tertiary affections. I have then often had occasion to congratulate myself upon the results of the use of calomel in minute doses, especially in a robust and still young man, who, in less than twenty-five days, was cured of hemiplegia, and in a woman of 29 years old, suffering from intense cephalalgia with transient aphasia, which manifestations had been treated unsuccessfully with iodide of potassium.

If it should happen that the cachectic condition was kept up by amyloid degeneration of viscera such as the liver and spleen, we might, as has been recommended by Dr. Budd,* make use of a nitric acid drink. Administered for a certain time, nitric acid possesses, according to that physician, a remarkable tendency to cause absorption of the morbid deposit to which the enlargement of the organs is due, to restore their normal texture, and to produce an improvement of the general condition. When it is well borne, this remedy, to which we have several times had recourse, is given for months together, without deranging the stomach and without producing excessive acidity of the urine.

The local indications, comparatively frequent in the course of the tertiary period, vary with the seat and degree of intensity of the lesions. They present themselves when ulcers more or less deep follow syphilitic neoplasms, and leave behind them losses of substance, contractions of canals, or other derangements capable of involving important functions. Ill-conditioned ulcers, indisposed to cicatrise, developed upon the surface of the skin or mucous mem-

with administering stomachic and tonic remedies and a strengthening diet (*Lancet*, July 27th, 1857, p. 650). It is by no means astonishing that such treatment should succeed under many circumstances, after what we know of the spontaneous cure of syphilitic manifestations. It is generally because we do not know the natural course of diseases that properties are attributed to certain means which they do not really possess.

* See *Dublin Medical Press*, September 16th, 1863.

branes, are favourably influenced by the application of glycerine, alcohol, or tincture of iodine; when these lesions take on the serpiginous form, the means in question are not always sufficient, and it becomes necessary to have recourse to cauterisation with nitrate of silver or perchloride of iron, more rarely with the acid nitrate of mercury or corrosive sublimate.

Gauthier recommends touching ulcers of the throat with a pencil of lint dipped in a weak aqueous solution of tincture of iodine containing a minute quantity of iodide of potassium. Introduced into the nasal fossæ in cases of ozæna, this solution corrects the fœtor of which those cavities are the seat.

It is very evident that every kind of inflammatory complication supervening under these circumstances will require the employment of sedatives and emollients. Local treatment is not less useful in the syphilitic affections of the apparatus of locomotion. I have been able, on several occasions, to verify the good effects of blisters for syphilitic arthropathies, osteocopic pains, and osteo-periostitis. In the case of obstinate exostoses, Melchior Robert recommends dressing the blisters with tincture of iodine or strong mercurial ointment and then covering them with emollient poultices. These means may also be used against muscular contractions. Ulcerating gummy tumours of the muscles require the same management as deep-seated cutaneous ulcers. Mercurial ointment, or Vigo's plaister, assists the resolution of tertiary syphilitic lesions seated superficially.

Certain lesions may necessitate recourse to a surgical operation, and these are chiefly those affecting the palatine vault, the pharynx, and the air-passages. When perforations of the palatine vault or of the velum palati refuse to cicatrise, staphyloraphy should be tried, if it be applicable; if not, it is still possible to remedy these lesions with the aid of well-made obturators.* Another circumstance fitted to justify a surgical operation is, when adhesions have become formed in consequence of the ulcers, between the posterior surface of the velum palati and the upper part of the pharynx. We know that these adhesions most frequently have a syphilitic origin,† which is

* Gabriel Fallopius already tried to remedy, by means of an instrument of this kind, syphilitic perforation of the palatine vault. (See *Aphrodis.*, p. 829.)

† This origin is met with twenty-six times in thirty cases given in the report by Dr. Paul, of Breslau, recently translated by Dr. Verneuil. (See *Archives de médecine*, October, 1865, p. 422.)

explained by the fact that syphilitic ulcers are the most frequent of all those observed in those regions.

Lesions of the air-passages cause, in some cases, derangements of respiration so considerable that it becomes necessary to perform tracheotomy.* Useful when the larynx alone is affected, this operation is often without result in lesions of the trachea, the usual seat of which, as we have already stated, is the lower portion of the trachea.

§ 3. *Treatment of hereditary syphilis.*

Before treating hereditary syphilis, we should endeavour to prevent it so far as lies in our power. It is for this reason that a conscientious physician should never sanction the marriage of any person who is the subject of a syphilitic affection. But when there are no longer any symptoms, then permit the marriage, says Vidal de Cassis, if the treatment has been complete and six months have elapsed without any manifestation. For my own part, I should not venture to go so far; I should, at least, require of the patient that he should first pass a season in one of the thermal establishments to be spoken of further on, and then only should I give an opinion. Marriage once completed, a physician ascertaining the existence of syphilitic affections on either side has no alternative except that of forbidding all sexual intercourse for the time being, which measure may be less rigorously enforced in proportion as the manifestations belong to a more advanced period of the disease.

Transmitted hereditarily, syphilis calls for treatment in the fœtus, in the new-born child, and at a more advanced period of life.

1. In the fœtus, syphilis is, as we know, one of the most frequent causes of abortion. But, to combat the disease in the fœtus, it becomes necessary to act upon the mother. The question whether syphilis should be treated during pregnancy has been answered in various ways. The majority of the older physicians were inclined to abstain, and this view, which is shared by Doublet, has been adopted, some years ago, by Dr. Huguier, who believes that mercurial treatment adopted in the course of pregnancy predisposes the woman to more serious after-consequences of delivery than those observed after simple treatment. Some physicians, going further in this direction, have accused the mercury of causing the abortion. This opinion,

* See Demarquay, *Union Médicale*, 1864.

which Coulson's observations concerning the mode of action of mercury upon the functions of the uterus have contributed not a little to accredit, is evidently exaggerated. Neither the duration of the treatment nor the doses of the medicine appear capable of producing such a result; observation, moreover, is by no means in favour of this view.

Amongst the numerous physicians who recommend specific treatment for pregnant women, must be mentioned N. Massa, Garnier, de Blégnny, Astruc, Petit, Fabre, Levret, Rosen, Underwood, Swediaur, Bell, Bertin, S. Cooper, Lagneau, Vannoni,* Gibert, Cazenave, Cullerier, Ricord, Devilliers, &c. But, according to all those physicians, mercury, properly administered, is almost always opposed to abortion, while this accident is common in the absence of all treatment. Pick,† who has made numerous researches on this subject, has arrived at very similar results. Thus he points out the value of the adoption of specific treatment in women affected with syphilis during pregnancy, and does not hesitate to have recourse to this treatment, the mother being exempt even from any manifestation, when the health of the father and previous miscarriages give rise to a suspicion of infection of the fœtus. In a discussion at the Academy, which caused great sensation, Professor Moreau quoted the case of a woman who, after several successive pregnancies, all followed by delivery before the time and by the death of the fœtus, was subjected, as a last resource, to antisyphilitic treatment, and whose fresh pregnancies ran on to the full time.‡

Mercury, the drug to which most of the physicians in repute agree in giving the preference, may be administered internally, but on condition that the digestive functions, already predisposed to become deranged by the pregnancy, are not notably out of order. The derangement of those functions necessitates the employment of inunction, which should be made daily with strong mercurial ointment.

2. In the syphilitic new-born child, Guyon-Dolois and Gardanne

* *Il Raccoglitore medico*, August, 1842. Consult: E. Bertin, *Gazette hebdom.*, 1858, p. 862.

† See *Schmidt's Jahrb.*, t. cxx. p. 194.

‡ Cazeaux, Maisonneuve, and Montanier are against treatment when the parents appear healthy; but Dubois, Depaul, Moreau, Vidal de Cassis, and Putegnat de Lunéville are of the opposite opinion, if the parents have had syphilitic children.

believed it necessary to wait for a certain time after birth, before beginning the treatment. But, if we take into consideration the serious nature of syphilis and the danger incurred by young children affected with it, we cannot adopt this mode of proceeding, which is based upon no data. In my opinion, the treatment should commence as soon as syphilis manifests itself; in the absence of any symptom we must wait. This opinion, which differs from that of Diday, of Lyons, who advises treating all children both of whose parents are known to be syphilitic, appears to me to be justified by the fact that mercury no more prevents the appearance of the manifestations of hereditary syphilis than it does that of the manifestations of acquired syphilis. It is proved, moreover, says Vidal de Cassis, that infected parents have produced very viable children, who have never presented the least symptom of syphilis. Thus we must always treat when manifestations exist, unless complications superadded to the syphilis contra-indicate specific treatment.

Mercury and iodide of iron are the two chief agents for the treatment of hereditary syphilis, and, accordingly as these agents are administered to the child or to its nurse, the treatment is called direct or indirect. The direct treatment was employed at first. N. Massa (1536), Paré (1553), Botal (1563) Augier-Ferrier, Guyon-Dolois, de Blégnny, and Astruc, were advocates of it; they employed frictions and fumigations, that is to say, a direct external treatment. Rivière, Vercelloni, Brunner, Sanchez, Underwood, Nisbett, and Bell advised mercury internally, that is to say, the direct internal treatment.

The idea of treating a diseased child by giving remedies to the mother is to be found already in Hippocrates.* Pierre Garnier, of Lyons, in 1699, proposed to administer mercury to the child in its mother's milk. Levret, Burton (1775), Rosen de Rosenstein, Colombier, Doublet, Faguer, Swediaur, &c., soon adopted this mode of treatment. For the same purpose, the milk of a goat or an ass previously rubbed with mercurial ointment was employed. At first some success appeared to be obtained, but this was not confirmed by after observation. Since that time Bertin, Lagneau, Philippe Boyer, S. Cooper, Gibert, and Cazenave, had recourse to a mixed treatment, and more recently, Cullerier, Bassereau, Natalis Guillot,

* *Lactantium cura posita est tota in medicatione nutricum. Epist., liv. iii.*

Putegnat, and Vidal de Cassis have returned to the direct treatment. This treatment is, in fact, the only efficacious one, for the doubts expressed at first as to the insufficiency of the indirect treatment have become certainties since strict chemical analyses have shown that mercury passes little or not at all into the milk of the nurses.

Péligot* could not discover mercury in the milk of an ass which took five grains of corrosive sublimate daily, nor in that of a goat which took as much as twelve grains. Cullerier, Réveil, and Lutz, were equally unsuccessful in the analyses which they made of the milk of women who had taken preparations of mercury. But Personne, employing another process, succeeded in finding mercury in very small quantity in the milk of a woman who took, for two months, three-quarters of a grain of the proto-iodide daily.† Thus were explained the failures of the indirect treatment and the necessity which existed of reverting to the direct treatment, either external or internal.

The direct external treatment consists in the employment of inunction and baths. The inunction is made with calomel or mercurial ointment. Cazenave advises rubbing the gums with calomel mixed with honey. Massa, Botal, Doublet, and Bertin employed frictions with mercurial ointment. Lagneau and Putegnat de Lunéville use them at present, and Cullerier made them the basis of his treatment at the Lourcine Hospital. "After having bathed the child in water several times for the purpose of alleviating any inflammation which may exist, and also of predisposing the skin to absorb more readily, I cause to be made," says that observer, "upon the sides of the chest and towards the axilla, inunction with fifteen grains of Neapolitan ointment, on one side one day and on the opposite side the next day. This inunction should be made gently, so as not to irritate the skin, and may be prolonged for several minutes. Twice a week I suspend the inunction and give the child a tepid bath to which I cause to be added from thirty to sixty grains of corrosive sublimate. For children more than a year old, the dose may be increased (thirty grains of the ointment and ninety grains of corrosive sublimate). These frictions very rarely produce local symptoms such as erythema or vesicular eruptions. When the genital organs and anus are the

* *Journ. des connaissances méd.-chir.*, November, 1836.

† See Cullerier, *Bull. de thérapeutique*, October, 1852. Compare: Ch Ravin, *Du traitement de la syphilis congénitale*. Thèse de Paris, 1857.

seat of mucous patches or of ulcers with an abundant secretion, I touch them occasionally with a solution of nitrate of silver (four, six, eight parts to thirty of water); but, if the secretion be moderate, or dry tubercles only exist, I content myself with vegetable lotions; but I always powder the surfaces with starch, flour, or lycopodium, and isolate them as much as possible with dry linen or lint. When it is the skin of the face which is attacked, as is often the case in very young children, the same lotions should be employed, but, moreover, as the parts are here exposed to the air, and desiccation very readily occurs, which produces cracks and fissures which are very painful when the child cries or sucks, they should be covered, as often as possible, with some mild cerate, such as simple, opiate, or calomel cerate." For my own part, I willingly subscribe to this mode of treatment, for I have several times had the opportunity of observing its good effects.

The direct internal treatment, more commonly employed in England,* requires certain precautions, on account of the great irritability of the bowels in young children. The bichloride of mercury (corrosive sublimate), recommended by Bertin and Lamauve, is the preparation generally selected; it is given in minute doses in milk, honey, broth, syrup, &c. Pure calomel, as administered by Rivière, Vercelloni, and Brunner, or combined with chalk, as is customary in England, is always less easily borne on account of its purgative properties.

The sudorific preparations, recommended by Ferrier, Harris, Brunner, &c., are means for the most part unreliable and deserving, at the most, to be added to the mercurial treatment. The nurse's milk is the best food which a syphilitic child can take. The digestive functions require to be watched carefully.

To sum up, the direct treatment is the only really efficacious one. It consists in the internal use of mercury and better still, in frictions with mercurial ointment and baths with corrosive sublimate.† The mixed treatment (direct and indirect at the same time) is indicated when both nurse and child are affected. But these different treatments are not always sufficient, and it often becomes necessary to

* S. Cooper, *Traité élém. de path. chirurg.* Paris, 1841.

† An English surgeon, Dunn, states that he has several times treated infantile syphilis successfully with chlorate of potash. (Communication to the Royal Medico-Chirurg. Society.) These cures have been contested.

add local means. Fatty substances, cucumber pomade, fresh lard, &c., are indicated in most of the cutaneous eruptions. Gibert recommends an ointment with calomel or proto-iodide for tubercles and pustules. We know that Cullerier uses a solution of nitrate of silver for mucous patches and ulcers of the genital organs and anus.

Such is the treatment of the more superficial manifestations of hereditary syphilis. When these manifestations involve important viscera, and especially when they are accompanied by cachexia, the preparations of iodine are to be preferred. In affections of the liver, Gubler recommends iodide of potassium to the extent of one grain and a half daily, while Cullerier states that he has obtained good results from proto-iodide of mercury. Bouchut gives several cases of syphilitic coryza cured with iodide of potassium. For my own part, I cannot too strongly recommend the iodide of iron in young children. I have had frequent opportunities of witnessing the good effects of this remedy in visceral lesions with cachexia. It is given in the form of a syrup.

3. The treatment of tardy hereditary syphilis does not differ notably from the treatment of acquired syphilis: preparations of iodine are still suitable; and lastly, it is perhaps more to hygiene and to nutritive agents (cod-liver oil, &c.) than to therapeutic agents that recourse should be had.

§ 4. *Physiological and pathogenic effects of mercury and iodide of potassium.*

Experience having shown the good effects of mercury and of iodide of potassium in the treatment of syphilis, it is not without interest to ask of theory the mode of action of these substances and to seek in clinical observation for the pathogenic effects to which the patients who make use of these therapeutic agents are exposed.

Our knowledge of the physiological action of mercury is, as yet, very incomplete. Used externally or internally, the mercury is absorbed; then, according to several authors (Mialhe, Voit, &c.), it is transformed into bichloride,* probably at the expense of the chloride of sodium contained in the blood; whence the preference

* Hunter thought that all the preparations of mercury must be transformed into the same compound, since they produce only one and the same effect upon the constitution.

given by some physicians to corrosive sublimate. Thus Michaelis has attached importance to grey ointment and corrosive sublimate only; to the first, because it does not derange the stomach, to the second, because it is, according to Voit's theory, the result of the transformation of all the preparations of mercury.

This mode of action once accepted, it was soon made use of to explain the physiological and therapeutical mode of action of mercury. The property of engendering products easily absorbed but not readily passing into the condition of permanent tissues was attributed to the combination of the sublimate with the albumen and the albuminous exudations. This explanation, which Overbeck* strives to apply to the mode of action of mercury in inflammation, would also be applicable to syphilis in consequence of the same combination. By this combination, the modified morbid syphilitic products cannot become organised, they are rendered inoffensive and afterwards eliminated. It is true that this theory has the fault of resting too exclusively upon chemical data analogous to those obtained in the laboratory, but it must be acknowledged, however, that the preparations of mercury act upon the blood and upon most of the functions of the economy. Under their influence, the aqueous contents of the blood become augmented at the same time as the hæmatine (Ayrès), while the globules and the albumen are diminished in quantity; the urine, which is turbid, alkaline, and scanty (Buchheim), sometimes contains albumen and mercury eliminated by the kidneys. More copious in certain cases, the alvine evacuations contain bile and epithelia. The skin becomes moist, the eye loses its brightness, the tongue is furred, and the bronchial secretion is increased. Fife† and afterwards Prout‡ ascertained that the prolonged use of a mercurial treatment determines a decrease in the proportion of carbonic acid exhaled. In a general way, the action of mercury upon the economy is opposed to the increase and to the development of new tissues; and the proof of this is, that animals and men subjected to this agent during the period of growth

* R. Overbeck, *Mercur und Syphilis*, p. 263. Berlin, 1861.

† A. Fife, junr., *Dissertatio chimico-physiolog. inauguralis de copia acidî carbonicî e pulmonibus ad respirandum evoluti*. Edinb., 1814.

‡ Prout, *Further observ. on the quantity of carbonic acid gas emitted from the lungs during respiration* (*Annals of Philosophy*. London, 1814, vol. iv. p. 335).

scarcely increase in weight, and that, in adult age, they may lose bulk.

I shall not dwell longer upon these physiological effects; the pathogenic effects differ little from them. If the change in the blood become well marked, the lips grow pale, the eyes become hollow, the emaciation increases, the nervous and muscular functions are weakened, the tissues are flabby, the breathing is difficult, and sometimes hæmorrhages occur at various points of the body, but especially from the gums and mouth. This condition, to which the name of mercurial cachexia has been given, is, however, but rarely observed, at least at the present time, in individuals treated for syphilis; but there are other symptoms which are more frequently met with. Mercurial fever, characterised by marked uneasiness, an easily appreciable acceleration of the pulse, and depression rather than increase of power, is most frequently combined with a bad state of the digestive functions and with salivation. Sweating, erythema, and eczema, symptoms pointed out by Pearson, in 1788, have since been carefully studied by Alley.* Erythema, which is devoid of analogy with roseola, is rather rare; the vesicular eruption is more frequent and consists in a quantity of small acuminate vesicles resting upon a red base. Ulcers of the mouth and pharynx, already well described by Bell,† also possess peculiar characters upon which we have dwelt already (see Vol. I. p. 170). A symptom much more frequent is mercurial stomatitis; the swelled and painful gums are covered with whitish pellicles; the breath is fetid and the patient complains of a metallic taste in his mouth; the tongue, covered with a mucous layer, is thickened; and saliva flows abundantly from the mouth. It is for the purpose of preventing the latter occurrence that the employment of various means, and especially of chlorate of potash, has been recommended, but without constant success. This salt may also be employed with advantage against buccal lesions developed under the influence of mercury. Velpeau recommends that the gums should be rubbed three or four times a day with powdered alum, which the patient takes upon his finger. A great number of other means have been pointed out since the time of Matthiolus; but none of them, according to Astruc and Swediaur,

* *Observations on the Hydrargyria or that vesiculous disease arising from the exhibition of mercury.* London, 1810.

† *Loc. cit.* t. ii. p. 147.

suffice to prevent salivation. Dyspepsia is another bad result of mercurial preparations; the appetite falls off, digestion is difficult, and there is a feeling of weight in the epigastric region. Under these circumstances, the patient sometimes becomes emaciated, and is irascible and impetuous. These various symptoms, for which it is not always easy to provide a remedy, indicate, at the least, a suspension of the mercurial treatment.

Certain derangements of the nervous functions appear also to depend upon the use of mercurial preparations. Cases furnished by Colson* and Diday show that tremor may be one of the effects of the employment of mercury, and it is not impossible that certain forms of madness (hypochondria, idiotcy) also acknowledge the same origin.

Iodide of potassium† is easily absorbed. The first effects of its physiological action, according to Professor Küss,‡ of Strasbourg, show themselves in the alimentary canal, where it acts by contact before it acts by absorption. A sensation of dryness and thirst is felt in the pharynx, which, if the doses are rather large, becomes red and swelled at the same time with the tonsils, without much difficulty in swallowing. An increased secretion of mucous or iodic pyalism succeeds this condition. The saliva is viscous while neither the gums nor teeth present any pathological change. After using the iodide for some time in increasing doses, the tongue becomes covered with a uniform, greyish layer, easily recognisable when it has once been seen. This layer, which usually precedes the iodic eruption, is the indication of the maximum therapeutic effect, and thus its absence or its presence may be a source of valuable hints for the augmentation of the doses.

* Colson, *Essai sur le tremblement observé à la suite du traitement mercuriel*. (*Arch. gén. de méd.*, 1827, 1^{re} série, t. xv. p. 338.)

† Iodide of potassium, according to Mosler (*Virchow's Archiv*, t. xiii.) is rapidly eliminated by the bile, while calomel passes with difficulty into that product of secretion, and thus the former of these agents would appear to deserve the preference in the treatment of syphilitic affections of the liver.

‡ *Gaz méd. de Strasbourg*, November, 1865. For the effects of iodide of potassium and iodide of sodium, consult Trousseau and Pidoux, *Éléments de thérap.*, p. 245, 5^e édit. Titon, Thèse de Paris, 1856. Lomet, *Action de l'iodure de potassium sur les différents appareils*. Thèse de Strasbourg 1863. Gamberini, *Bollet. delle Scienze mediche*. Bologna, April, 1852.

In the respiratory apparatus a stuffing up of the nasal fossæ is frequently observed, from exaggeration of the secretion of the pituitary membrane, a true coryza, in a word. The bronchi share this process. There is a dry cough, but little marked, with frothy, but never thick or purulent expectoration.

On the part of the circulation, there is first of all acceleration and fullness of the pulse; then, at the expiration of a period of time varying with the individual, the pulse becomes depressed and finally resumes its first condition. This, according to the Professor quoted, explains the contradictions of experimenters. Hence also the conclusion that persons whose pulse is naturally quick are less easily acted upon than those whose pulse is more moderate. The salt of iodine is met with in the blood with all its chemical qualities; its action, consequently, is entirely catalytic, and it does not modify the blood globules either in form or in number. Its pathogenic influence is almost null if we know how to graduate the doses of it and dilute it with a sufficient quantity of fluid. Wallace nevertheless points out as consequences of the use of this drug, constipation, profuse perspirations, and more rarely salivation. Its special action upon the skin manifests itself in the form of iodic acne, the more or less discrete pustules of which have, at first, for their favourite seat, according to Küss, the regions nearest to the syphilitic lesion. The appearance of this eruption may safely be predicted when the greyish coat appears upon the tongue which announces the saturation of the economy. The Strasburg Professor mentions also a limited infiltration of the sub-cutaneous connective tissue of all the regions of the body, affecting by preference the vicinity of the parts affected. Cephalalgia, tremor, vertigo, and neuralgia are the further derangements which may result from the use of iodide of potassium.

This agent appears, moreover, according to Overbeck, to possess the property of acting upon the albumen of the blood, for in individuals poisoned with lead, or in those who have taken preparations of mercury, it is sometimes seen to determine the passage of albumen and of a larger quantity of lead or of mercury into the urine. Like mercury, iodine would thus exert a modifying, solvent action upon the albumen, and to this action are due, according to that observer, the therapeutic effects of the preparations of iodine in syphilis. But this is a view which, in my opinion, is altogether hypothetical. Nevertheless, I shall abstain from forming for myself a theory which would be as uncertain as all those already propounded on this sub-

ject.* I shall content myself with pointing out that mercury and iodine do not produce any real action except upon the anatomical determination, and that they remain without effect so long as that determination does not exist. It is a fact that those agents do not in any way modify the derangement of nutrition which presides over the formation of the syphilitic product, since they are incapable of preventing its appearance. Their action is exerted solely upon that product, or rather upon the elements which constitute it; it consists, in fact, in favouring the retrograde or fatty metamorphosis of those elements and their absorption. If this be so, it cannot be said that these remedies are specifics in the sense of neutralising the cause, or syphilitic virus; † they can only be considered as such because they exert a special action, in some sort elective, upon the connective element, and very especially upon the local determinations of syphilitic origin. These preparations, as we know, are without effect against lesions such as pulmonary tubercle, the resemblance of which to gummy tumours is very striking.

To sum up, mercury and iodide of potassium do not attack the essence of syphilis itself but its manifestations. As in all diseases, the syphilitic diathesis is not cured by the efforts of therapeutics, but by the forces of the organism alone. This is a principle of which no physician should be ignorant. There are, then, two indications: to combat material lesions capable of compromising existence, and to place the patient in circumstances the most favourable for enabling him to triumph over his disease. Herein lies the whole secret of the treatment of syphilis, which secret may be expressed in two words; if there be any lesion, act; if there be no lesion, wait.

One fact worthy of remark is that, far from arresting the symptoms of syphilis, mercury and iodide of potassium sometimes

* It is evidently unnecessary to examine here the various theories which, since Fracastor's time, have been propounded concerning the mode of action of mercury in the cure of syphilis. Let us state that these theories, a succinct analysis of which will be found in the French translation of Fracastor's poem, by Yvaren (Paris, 1847, p. 287), have necessarily varied with the medical doctrines, and that there is not one of them which would appear reasonable at the present day.

† Cullerier denies the therapeutic specificity of mercury in syphilis. See *Recherches pratiques sur la thérapeutique de la syphilis*, &c., by Dr. L. Champonnière (*Gaz. méd.*, 1836, p. 623).

impress upon them a certain degree of acuteness.* It would not even be impossible for them to contribute to the calling forth of fresh symptoms. Bazin † observed that, under their influence, groups of tubercles sometimes disappear in one region to reappear in another, and that it is not rare to see mercurial treatment determine fresh outbreaks when the affection had already for a long time been stationary.‡ Hutchinson has met with similar cases, for he states that he has seen syphilitic iritis declare itself with great intensity, or even invade the eye of the opposite side, after the employment of a mercurial treatment, even when that treatment had produced salivation. I have observed the same thing for syphilitic lesions of the viscera, and, amongst the cases given in this work, there are some in which the most serious and most intense symptoms showed themselves only a few days after the employment of a specific treatment. In a case related by Faurès, treatment with iodide of potassium had just been commenced, when convulsions, followed by hemiplegia, supervened. In a patient of Legroux's, I saw hemichorea follow hemiplegia a few days after the use of calomel.§ I also have had the opportunity, under similar circumstances, of observing the decrease of hemiplegia at the same time that paralysis showed itself on the opposite side. At this very time, I have under my observation a young woman of 22 who, after taking iodide of potassium for three days for osteo-periostitis of the ascending portion of the inferior maxillary bone, saw an exostosis appear on the forehead. Such cases cannot cause serious alarm, or cause us to suspend our treatment; but they necessitate a more careful watching of that treatment.

§ 5. *Mineral waters.—Water cure.—Diet.*

The therapeutic means of which we are about to speak generally

* The property of rendering more acute certain manifestations of syphilis does not belong to mercury and iodide of potassium only. It sometimes happens, say Trousseau and Pidoux (t. i. p. 337), that, under the influence of the preparations of gold, all the local lesions of syphilis become more intense, and even that fresh ones make their appearance.

† *Leçons sur les syphilides*, p. 174.

‡ *Medical Times and Gazette*, July 14th, 1860; and *Gaz. hebdom.*, 1860, p. 620.

§ For the observations by Faurès and Legroux, see L. Gros and Lancereaux, *Affections nerveuses syphilitiques*, p. 199.

suffice for the cure of mild syphilis, and, in case of severe syphilis, they are powerful auxiliaries of mercury and iodide of potassium, from their tendency to direct the diseased organism back to its natural type.

MINERAL WATERS.

Th. Bordeu, Recherches sur les maladies chroniques, 1775, p. 294. *Patissier*, Manuel des eaux minérales de la France. Paris, 1818. *Gibert*, Traité des maladies de la peau et Manuel des maladies vénériennes. Paris, 1840. *Anglada*, Traité des eaux minérales, 1833. *Dupasquier*, Eaux, d'Allevard, &c. *C. Despine*, Manuel de l'étranger aux bains d'Aix en Savoie, 1850. *Fontin*, Bulletin de l'Académie de Médecine, 1845, et Recherches sur les eaux minérales des Pyrénées, &c. Paris, 1853, p. 380. *Constantin James*, Guide pratique, &c. Paris, 1854. *Vidal*, Essai sur les eaux d'Aix en Savoie, 1851. *Engelmann*, Sur l'usage des eaux de Kreuznach dans le traitement des affections syphilitiques. Frankfort, 1849. *Dassier*, De l'emploi des eaux sulfureuses, &c. *Journal de médecine de Toulouse*, 1851. *Marc Pégot*, Essai clinique sur l'action des eaux thermales sulfureuses de Bagnères-de-Luchon dans le traitement de la syphilis. Paris et Toulouse, 1854. *Helft*, Handbuch der Balneotherapie. *Wetzlar*, Traité pratique des propriétés curatives des eaux sulfureuses d'Aix-la-Chapelle, 1856. *Baizeau*, Mémoire sur l'influence des eaux minérales sulfureuses sur la syphilis. *Gazette médicale de Paris*, 1856. *Lambron*, Annales de la Société d'hydrologie médicale de Paris, t. iii. p. 168. *Durand-Fardel*, Traité thérapeutique des eaux minérales. Paris, 1857. *Petrequin et Socquet*, Traité général pratique des eaux minérales, &c. Lyon, 1859. *Reumont*, Neue Beobachtungen und Erfahrungen über die Wirkung der Aachener Schwefelthermen bei Syphilis. Deutsche Klinik, 1862. *Ludwig Diemer*, Die Aachener Schwefelthermen in constitutioneller Syphilis und Quecksilber-krankheiten. Aachen., 1862. *Pidoux*, Sur le traitement par les eaux minérales. *Union médicale*, 1863, p. 387. *Martin Lanzer*, Des eaux thermales de Luxenil contre le virus syphilitique, &c. *Revue de thérapeutique*, et *Gaz. hebdomad.*, 1863, p. 341.

It is not in the present day only that mineral waters have been employed in the treatment of syphilis. Fracastor,* in his celebrated poem, alludes to the properties of sulphur waters. Nevertheless, thermal waters were little employed by the first syphilographers, who, for the most part, regarded them as deleterious, no doubt on account of the property which they possess of developing manifestations which had previously remained latent.† Borden was one of the

* Illa ego, quæ venas per montis hiantes
Callirhoe, haud ignota tuæ, fumantia mitto
Sulfura.

† See Benedictus Victorius, *De morbo gallico*, in *Aphrodisiacus*, p. 638.

first to foresee all the benefit to be obtained from the influence of thermal sulphur waters in the treatment of syphilitic diseases, and numerous observations have shown the just appreciation of that learned physician. Mineral waters having assumed a greater importance every day in therapeutics, their action upon syphilis was soon studied, as well as upon most other diseases. In reference to the subject with which we are occupied, Durand-Fardel has summed up the state of our knowledge in an excellent work from which we shall borrow on several occasions.

A well-ascertained fact is, that thermal waters do not constitute a specific treatment for syphilis. Ricord,* Sigmund,† and many other observers have seen syphilitic affections reappear after the employment of them. If, in some cases, the use of them has been followed by the final cessation of the syphilitic manifestations, this effect, says Lambron, has been produced in subjects who, previously to the thermal treatment, had taken for a long time, with a certain degree of regularity, mercurial preparations in considerable quantity. Marc Pégot‡ equally believes that the cures which it is possible to attribute to sulphur waters have been made in individuals saturated with preparations of mercury. Therefore, according to Lambron, the curative effects are only produced because the thermal waters give to the albumino-hydrargyrous compounds arrested in the web of the organs the fluidity necessary for the completion of the cure. C. James gives, from Pagès, two instances of salivation and stomatitis, apparently mercurial, supervening under the influence of the Barège waters, in individuals who had not taken mercury for fourteen and eighteen months respectively. But, at all events, setting aside theory, it is important to know that mineral waters exert upon the most obstinate secondary and tertiary affections an action favourable to the employment of a specific treatment. Thus it is under certain circumstances, and especially in cases of obstinate syphilis with cachexia, that the use of thermal waters is indicated.

The numerous cases given by Dassier, Pégot, Despine, and others, place beyond doubt the good effects of mineral waters combined with preparations of mercury or iodine. Not only does the thermal treatment combat successfully syphilitic affections by imparting to mercury and iodine properties they no longer possessed, but

* Quoted by Durand-Fardel.

† Quoted by Helfft, p. 507.

‡ *Loc. cit.* p. 170.

it also stimulates the organism, restores languishing functions, especially of nutrition, and is one of the chief remedies to be opposed to syphilitic cachexia.* Another effect of the treatment with mineral waters is the almost constant absence of salivation, in spite of large doses of mercury,† or, as observed by Lambron, the rapid disappearance of that symptom, if it has already shown itself.

Thermal waters having, like most of the exciting agents, the property of causing to appear manifestations which had remained latent, find their indication and their utility whenever it is desirable to ascertain whether an individual who has been affected with syphilis is still under the influence of that disease or not. In this respect, M. Pégot, C. James, and Lambron regard the sulphurous mineral waters as the touchstone of syphilis. But the infallibility of this means of verification is far from being recognised by all authors. Ricord, Gerdy, Helfft, and Durand-Fardel cannot make up their minds to admit the action of sulphur waters as an absolute criterion for the diagnosis of syphilis in all obscure or doubtful cases. Moreover, it is not only sulphur waters which would appear to have the property of unmasking the hidden effects of syphilis: Durand-Fardel has seen the waters of Plombières and those of Vichy act in this manner, and, according to Fleckles, the baths of Carlsbad have several times brought to light again old syphilitic affections.

Warm sulphur waters take precedence, however, of all the other classes of mineral waters when it is a question of assisting the cure of syphilis, or of reproducing its manifestations. The thermal soda sulphur waters of Barèges, Bagnères-de-Luchon, Cauterets, Aix-en-Savoie, Allevard, Aix-la-Chapelle, Weilbach, Schinznach, Acqui, Viterbo, &c., are indicated by preference. In Germany chiefly, recourse has also been had to the chlorurated soda waters. Thus Dr. Peez praises the waters of Wiesbaden as useful in the cure of syphilides, and Rotureau informs us that the waters of Nauheim may constitute a very powerful adjuvant in combating secondary and still more tertiary manifestations.‡ In like manner, Engelmann prescribes with advantage the waters of Kreuznach, whenever the syphilis is accompanied by scrofulosis, in which case it is generally obstinate.

* See Pégot, *loc. cit.* p. 64.

† C. Despine, *loc. cit.* p. 217.

‡ *Études sur les eaux de Nauheim*, 1856, p. 120.

WATER CURE.

Applied to the treatment of syphilis, the water cure is simply a useful adjuvant; like mineral waters, it is unfitted to form a special method of treatment. Schedel erroneously believed that no other remedy cured with more certainty primary lesions; but L. Fleury justly points out the fact that Desruelles and the opponents of mercury have shown that chancres become cured in patients subjected to a simple treatment, and that in two or three weeks, that is to say, in a space of time not longer than that required with cold water. Does the water cure prevent consecutive affections? Has it any marked advantages over mercury and iodide of potassium? In a word, does it check, better than any other treatment, the progress of the syphilitic diathesis? Such are the questions which it is important to solve. But a case of secondary syphilis has been treated without success by Priessnitz (Scoutetten). Schedel gives three cases of secondary or tertiary syphilis against which the water treatment was also unsuccessful. Lubanski does not mention syphilis in his work. Bidart points out some cases of tertiary syphilis cured with cold water. Baldou gives eleven observations of patients cured, but most of them incomplete and very inconclusive, so that the cure of syphilis by the water treatment is by no means proved.

L. Fleury, not wishing to treat by the water cure alone patients affected with syphilis, has recourse at the same time to specifics, with which he combines sweating and general cold douche baths. "Under these circumstances," says that author,* "the water treatment has appeared to me to be a valuable adjuvant of specific treatment; it is very useful for combating the chloro-anæmia so often met with in patients affected with constitutional syphilis; it has also appeared to me to exercise a very favourable influence on the course of the disease, and chiefly on that of the secondary and tertiary manifestations; this influence has shown itself especially in feeble, lymphatic individuals, with a tendency to scrofula." In short, the good effects of the water treatment in the last periods of syphilis cannot be denied; it is only to be regretted that this mode of treatment has hitherto been too little tried. I believe that it deserves to be employed at the same time with hygienic measures after the use of mercury and of iodide of potassium, and that it is an excellent means for completing the cure of syphilis.

* *Traité pratique et raisonné de l'hydrothérapie.* Paris, 1856, p. 392.

DIETETICS.

Diet has from the earliest times been regarded as a powerful adjuvant in the treatment of syphilis. The ancient syphilographers attached more importance to it than modern writers do, and often exaggerated its effects. "In the first years after the appearance of syphilis," says Fracastor, "the patient was forbidden to leave his bed for a whole month; but since then this rule has been somewhat less strictly enforced. At that time he was also allowed only just sufficient nourishment to sustain life (three or at most four ounces of bread, two ounces of chicken, and one ounce of raisins). He had to abstain from wine, and take, as his only drink, the second decoction of guaiacum alone or with the addition of honey. At present, physicians are less strict; the patient is allowed to go out and to take more food. But the physician who employs the most rigorous measures cures his patients most certainly and most radically."* The management of syphilitics was not, however, confined to this; for we see the same Fracastor, in Book II. of his celebrated poem, recommend exercise in the open air, the pure air of the hills,† the pleasures of the chase, the tillage of the land, the exercises of wrestling, leaping, tennis, riding, &c.

Fallopian writes on the same subject:—"Ego vidi aliquos curatos ligno fagi, qui coniecti in triremes, atque instituta victus ratione tenuissima, laborantes, ex toto liberantur; sed iste non est usus medicus." Brassavole has given a good instance of the effects of gymnastic exercises in the history of the man who cured himself of nocturnal pains by going often to pull the rope of the great bell of

* *De morbis contagiosis. Aphrodisiacus.*

† Protenti potius campi mihi liber et agri
Tractus et apricis placeant in collibus auræ,
Molles zephiri pulsusque aquilonibus aer.
Hic, jubeo, tibi nulla quies, nulla otia sunt;
Rumpe moras, agita assiduis venatibus apros,
Impiger, assiduis agita venatibus ur̄sos.
Nec tibi sit labor aerii cursu ardua montis
Vincenti, rapidum in valles deflectere cervum,
Et longa lustrare altos indagine saltus.
Vidi ego sæpe, malum qui jam sudoribus omne
Finisset, sylvisque luem liquisset in altis, &c., &c.

The whole of the first part of the second book of Fracastor is devoted to dietetics.

Ferrara.* At a period much nearer our own, Van Swieten insisted upon the importance of dietetics :—"Vidi ipse memorabilem casum, qui me docuit, quid constans ægri animus, *cum victu penitus macilento*, ac validorum laborum tolerantia, efficere possit in lue venerea inveterata, et vix non desperata." He also gives the following case :—A young man had been treated four times by mercurial salivation and three times with decoction of guaiacum, and each time the disease, after having apparently been removed, manifested itself by new symptoms. Deprived of everything and abandoned by his family, this young man addressed himself to Van Swieten, who consoled him and promised to relieve him. He advised him to put on the dress of a peasant, and placed him, at the beginning of April, as servant with a farmer, who subjected him, for his board only, to the hardest work. He had nothing to eat except bread, parsnips, carrots, potatoes, and some kinds of fruit, and nothing to drink but whey; he abstained from meat, fish, eggs, milk, butter, and cheese. In the following October he was perfectly cured. Van Swieten saw him afterwards, when he was the father of several fine children.

As we have already said, it was by the aid of diet that patients, in the sixteenth century, sometimes succeeded in escaping the disastrous consequences of both the evil and its remedy, mercury, which was given them so lavishly. To diet also are to be attributed a great number of the cures which have been placed to the account of the sudorific woods. In like manner, it is by diet pushed to its extreme limits that the inhabitants of Abyssinia,† the fellahs of Egypt, and most barbarous nations extinguish their venereal affections. Diet also radically cured several hundred soldiers reduced, for several months, to eat nothing but biscuits and vegetables.‡ Lastly, it is diet which aided in the cure of those thousands of patients to whom, at a certain period, the benefits of a well-directed mercurial treatment were denied. Diet is, therefore, all-powerful in reference to syphilis, and, in reality, is quite as important in the chronic as in acute affections; for it is one

* See the treatises of Fallopius and Brassavole in *Aphrodisiacus*. Consult, in the same collection, the treatise of N. Massa, in which is to be found the observation of Broila Montanus.

† See Combes and Tamisier, *Voyage in Abyssinie*, t. i. p. 279.

‡ Clot-Bey, *Sur le traitement de la syphilis in Egypte*. *Gaz. méd. de Paris*, 1839, p. 394.

of the principal modifiers of the organism. This great power at the disposal of the physician is nevertheless generally neglected, and is scarcely employed at all in the present day. Vidal de Cassis and Payan have, it is true, drawn the attention of physicians to the successes obtained, in the Hospitals of Marseilles and Aix, by means of dry diet or the Arabian treatment; but the cases to which this mode of treatment, which has received the name of *cura famis*, is suited have not been sufficiently specified. Applied without distinction of cases, this method may be dangerous in enfeebled individuals, with a tendency to scrofula. Low diet, says Ricord, sometimes aggravates the disease, while a reparatory and tonic diet constitutes the condition of a successful treatment.

It follows from this that rules and indications exist in dietetics. The food should be little changed, for the habits of the patient should be respected. Butchers' meat in small quantity, vegetables, a little wine, but rarely spirits, unless the patient has been accustomed to their use, should make up the diet. Fresh air also, that second form of food, should not be neglected. "Remember," writes Diday, "that the air and sun bath, which is never a useless supplement, sometimes becomes a succour which is indispensable for those subjects in whom vital action languishes." Exercise in the open air is certainly indicated. Not only is fresh air useful, but it ought to possess certain properties. We know that rapid changes of temperature are not always advantageous and that it is not a matter of indifference in what medium we live. A warm and dry set of rooms, with a good exposure, is not to be neglected on the part of the individual who is seeking to become cured of syphilis. In such cases, inaction is a very bad thing; without requiring so much as Fracastor did, the patient should continue his usual occupations; and if he wishes to be cured definitely, he will do well to give himself up to a kind of training. Fencing, gymnastics, riding, all in the open air, and with sufficient nourishment, are, in our opinion, the best means of effecting that renovation of the organism without which the cure can never be complete.

But, at the same time, it is necessary to avoid fatigue and to endeavour to obtain good rest at night. Sleep is one of the most imperative requirements of the age at which syphilis is most frequently contracted; it ought to be taken at night and from nine or ten in the evening. Continence is another hygienic measure to be observed by the patient; he should avoid the pleasures of the flesh as well as

the pleasures of the table, and enjoy with the greatest moderation women as well as wine. How many times have we not seen the abuse of spirituous liquors become the occasioning cause of symptoms which would otherwise, perhaps, never have manifested themselves ! How many times especially have we not seen such excesses change the character of the disease, and convert a mild form into a malignant one ! Tobacco, and above all that which is smoked in pipes, such a frequent provoking cause of mucous patches of the mouth, should be carefully avoided. The moral condition, equally with the physical condition, call for the careful observation of the physician. The earlier syphilographers were not ignorant of this : N. Massa did not forget moral hygiene in the great men of his day who were affected with that disease,* neither should we forget it in reference to our patients ; be they great men or artisans, we should seek to alleviate their moral condition, which is often depressed and restless, as has been described already. All these considerations, upon which I cannot dwell longer at the present moment, have their value in the treatment of syphilis. Far be it from me to pretend to say all that is to be said on this point ; but let the physician not forget that the future of his patient depends, almost invariably, upon his observation or neglect of a rigorous system of diet.

§ 6. *Syphilisation and vaccination.*

SYPHILISATION.

Auzias-Turenne, De la syphilisation ou vaccination syphilitique (Archives de médecine, 1851, 4^e série, t. xxvi.) ; De la syphilisation et de la contagion des accidents secondaires, &c., in 8°. Paris, 1853 ; Correspondance syphilographique. Paris, 1860. *Sperino*, La syphilisation étudiée comme méthode curative et comme moyen prophylactique des maladies vénériennes ; traduit de l'italien par Trésal. Paris, 1855. In this interesting work is to be found a detailed historical notice of the question before us, and several papers by Drs. Mottini, Zelaschi, Galligo, Gamberini, and Calderini. *W. Boeck*, Syphilisationem studeret ved Sygesengen. Christiania, 1854 ; Recherches cliniques sur la syphilisa-

* The following is a summing up of his precepts :—" Lætentur igitur et sunt jocundi, fugiant plorantes et loca tristia ; sint in jocis, cantilenis et fabulis, quæ sint delectabiles et jocundæ. Audiant sonos et voces suaves. Et stent in viridariis et cum caris amicis ; et, si sunt studiosi, neque multum studeant, maxime materiæ difficili. Nic. Massa (*De morbo gallico tractatus*, cap. xv.).

tion (*Revue Médico-Chirurgicale* de Paris, September, 1854); De la syphilisation appliquée aux enfants, traduit en français par Hagen, 1857; De la syphilisation, état actuel et statistique. Christiania, 1860 (en français); et encore Bulletins de l'Académie de médecine, 1851, 1852. All these works are published in one volume under the title: De la syphilisation, &c., 1853. Hagen, De la syphilisation (Thèse de Strasbourg, 1855). Follin, De quelques doctrines modernes sur la syphilis et la syphilisation. Archives de méd., January, 1856. J. H. Guérault, Observ. médic. recueillies pendant le voyage du prince Napoléon dans les mers du Nord (Thèse de Paris, 1857). Melchior Robert, Bulletin de la Société impériale de médecine de Marseille, No. 4, 1859; et Nouveau Traité des maladies vénér., 1861, p. 750. Boeck, Note sur la théorie de la syphilisation. Gazette hebdomadaire, No. 19, 1859. Sigmund, Syphilisationen bei syphilitischen Krankheitsformen. Wien. med. Wochenschr., Nos. 17 und 19, 1859. Hebra, Ueber Syphilisation. Wien. med. Wochenschr., No. 12, 1859. Hermann, Zur Frage der Syphilisation. Wien. med. Wochenschr., Nos. 5, 6, 7, 1859. Lindwurm, Intelligenz-Blatt, No. 13, 1860. Diday, Gazette médicale de Lyon, 1860. Auzias-Turenne, Correspondance Syphilographique. Paris, 1860. Boeck, Note sur la syphilisation. Gaz. des hôpitaux, No. 83, 1861. Wildhagen, Ueber Syphilisation. Norsk Magazin, vol. xiv., 1860; and Behrend's Syphilidologie, neue Reihe, vol. iii., 1861. Martin Lanzer, La syphilisation devant la Société médicale du Panthéon. Journal des connaissances médico-chirurgicales, September, 1861. Auzias-Turenne, Discours sur la syphilisation à la Société méd. du Panthéon. Paris, 1861. Boecker, Die Syphilisation vom Sanitätspolizeilichen Standpunkte. Vierteljahrsschrift für gerichtliche Med., t. xx. p. 37. Mansouroff, Note sur le traitement de la syphilis constitutionnelle par les inoculations répétées du virus chancreux. Gaz. hebdomadaire, p. 8, 1861. Faye, Nogle Bemærkninger om Syphilisation eller curativ Chancker-inoculation. Christiania, 1861. Société Médicale de Clermont-Ferrand, Rapport et discussion sur la syphilisation. Clermont, 1865. D. J. Simpson, Remarks on Syphilisation or a cure for constitutional syphilis. Edinb. Med. and Surg. Journal, December, 1864. Boeck, Conférence sur l'histoire, la théorie, et la pratique de la syphilisation. Medical Times and Gazette, June 10th, 1865, and France médicale. Paris, 1865.

Syphilisation had its birth in France. While studying the effects of the syphilitic virus upon animals, Auzias-Turenne ascertained that after a certain number of inoculations, the animal inoculated becomes refractory to the chancreous virus, without having at all lost its good health and without having shown the least trace of the disease of which the first sign had been given it to satiety. It is to this immunity, or rather to the peculiar state of the organism thus modified, that Auzias-Turenne gave the name of syphilisation. A letter bearing date November 10th, 1850, announced this result to

the Academy of Sciences. Auzias-Turenne did not stop at this point, but thought it would not be impossible to reproduce in man what he had observed in animals. But how could the human race benefit by the discovery? Some persons relieved the experimenter from his embarrassment by offering themselves spontaneously for inoculation. A complete immunity having been obtained in them, it was soon sought to transport into the domain of therapeutics the theoretical ideas first of all propounded by Auzias-Turenne. At Turin, Sperino attempted to treat by syphilisation the prostitutes of his venereal hospital, and, about the same period, Boeck introduced syphilisation at Christiania. Since that time, several well-known physicians have put this method into practice, as well in Sweden as in Germany. In France, the author of a thesis presented to the Faculty of Medicine of Strasbourg, in 1855, making use of the results obtained by Sperino and Boeck, sought to re-establish syphilisation, already greatly fallen into discredit. In 1857, H. Guérault published the observations he had made on syphilisation during a voyage in Norway. Towards the end of the same year, Melchior Robert communicated to the Society of Medicine of Marseilles some experiments performed relative to syphilisation, and from which it follows that, under the influence of a certain number of inoculations of chancre, not exceeding thirty-six, indurated chancres may be made to undergo resolution easily enough, secondary and tertiary affections healed, and such a modification effected in the economy that lesions which resisted the employment of specifics afterwards become very amenable even to small doses of those remedies. That physician, however, reserves this means for exceptional cases, and prefers mercurial treatment to it. Diday, in an interesting critical study, inserted in the *Gazette Médicale de Lyon*, asserts that syphilisation is suitable to certain cases of obstinate syphilis only. Gibert and Bazin are of a very similar opinion; but many other distinguished physicians reject this mode of treatment. Quite recently, the Medical Society of Clermont-Ferrand manifested a tendency of this kind in the general conclusions which terminated a remarkable discussion on that subject. Nevertheless, it uttered the wish that liberty of experimenting should be granted in France to physicians who believed themselves to be sufficiently enlightened.

Syphilisation may be considered as a preventive means or as a curative means. Preventive syphilisation, now completely given up,

cannot arrest our attention ; curative syphilisation alone requires to be examined with care.

The conditions of success for curative syphilisation, as practised in the hospitals of Christiania, for instance, refer to the application of the method soon after the appearance of constitutional symptoms and in individuals who have never been subjected to any so-called specific treatment. As regards the mode of its application, the following is that described by Professor Boeck :—" I take the poison of a chancre contracted by coitus, or of an artificial pustule or ulcer in persons already under treatment by syphilisation. I make the first inoculations on the sides, and I make three such on each side. After three days, I make three other inoculations on each side, taking the matter from the pustules produced by the previous inoculation. I continue to inoculate every three days on the sides, always making use of the matter of the last preceding pustules, until I obtain an absolutely negative result. I then begin to inoculate both arms and proceed in the same manner as on the sides, until the matter again ceases to produce any result. Having arrived at this point, I take matter from another individual, and inoculate it upon the sides or arms, or even upon both places at once, and continue with the fresh matter in the same manner as with the first, until it no longer acts. When there exists immunity also for the second matter on the sides and arms, I begin the inoculations upon the thighs, and continue in the same manner as upon the places already named, until immunity is attained. Upon the three places mentioned, I again inoculate with matter taken from other patients, until no matter which I can obtain has any effect." The result of the inoculations soon manifests itself. At the end of twenty-four hours, the point of inoculation is swollen and surrounded by a small areola of a pale red colour ; on the third day, the pustule is generally well-marked, and, when it bursts, a small round ulcer, with perpendicular edges and a greyish, lardaceous floor, is left.

Such is the mode of proceeding and its immediate result. The first question which presents itself here is : What is the nature of the inoculated lesion ? To judge from the preceding description, it is clear that it is not the true syphilitic chancre which is transmitted under such circumstances, but simply soft chancre (pseudo-syphilis). The absence of an incubation period and the characters of the lesion would already leave no doubt on this point, even if we did not know

further that the initial phenomenon of constitutional syphilis is not reinoculable. Consequently, the pretended immunity sought to be attributed to syphilisation is the result of the inoculation of simple chancre, and, in this respect, the legitimacy of the term syphilisation might be contested. Moreover, this immunity is but temporary, even according to the chief advocates of syphilisation, since refractory individuals have been capable of being reinoculated later on, and a certain number of relapses have been recorded.

But physicians whose skill and merits cannot be contested assert that syphilis may be cured by chancrous inoculation; there are some even who prefer this mode of treatment to all the others. Thus a second question presents itself: What is the therapeutic value of syphilisation? Let us admit that the facts are, in such a case, difficult of interpretation. From the moment when the possibility of a spontaneous cure of syphilis can no longer be denied, it becomes necessary to inquire whether the cases of cure attributed to syphilisation are not the consequence of the natural course of the disease. But, to decide under such circumstances, it would be necessary to have an exact norm for comparison, such as a precise knowledge what, if left to themselves, would become of a certain number of cases similar to those treated by syphilisation. Then only would it, in my opinion, be permissible to form a definite opinion concerning syphilisation. Without the norm for comparison of which I have just spoken, statistics cannot prove anything absolutely. Of seventy-six individuals suffering from syphilis and cured by syphilisation, forty-five, we are told, were affected with vague symptoms only, and therefore left out; of the remaining thirty-one, five cases were treated unsuccessfully by syphilisation, and in twenty-six the symptoms disappeared. Such a result is evidently favourable; but it appears to me anything but conclusive and, to convince ourselves of this, it will suffice to glance at the statistics furnished us by the English physicians in reference to the non-mercurial treatment. Even if we accept the therapeutic efficacy of syphilisation, this method is far from rendering the patients exempt from relapses, and consequently we cannot attribute to it, as it has been sought to do, the property of modifying the whole economy. "I have treated 420 individuals in all," very recently stated Professor Boeck, of Christiania, "of whom forty-five have had relapses; but as it may be assumed that some of those treated last year are still liable to relapses, I may, perhaps, fix the number of these at 12—13 per

cent. So far as I can remember at this moment, thirteen of them were treated afresh by syphilisation and two with iodide of potassium, and three of them had, further, tertiary affections. The results obtained from syphilisation in children affected with hereditary syphilis have not been brilliant, adds that physician. Of forty-two children, twenty-two died; but I treated all the cases I could meet with, and everybody knows that, in such children, affections of internal organs exist which it is not in our power to cure."

To sum up, the therapeutic efficacy of syphilisation is as yet devoid of proofs sufficiently conclusive, and if this mode of treatment be useful, it is in certain given cases only, and without its being possible to guarantee the success of it. After this, there will never be reason to prefer syphilisation to the various modes of treatment pointed out above. It is very probable, moreover, that the therapeutic effects of syphilisation consist in a revulsive action entirely local.

Cullerier sought to convince himself of the fact by treating a certain number of syphilitics with blisters. He caused to be applied daily from four to six flying blisters, of the size of a half-franc piece, on the anterior surface of the chest; in exceptional cases, he had large blisters applied, and refrained, for one set of patients at least, from all mercurial or iodine treatment. One of the pupils of that teacher, Parisot, has given in his inaugural thesis * the results of this mode of treatment. Amongst twenty-two patients affected with primary, secondary, and tertiary syphilis, a certain number of cases of cure in which this treatment did not appear without effect might be counted. Thus this treatment caused to disappear papular, pustular, and squamous syphilides, mucous patches, &c.; but it was unsuccessful against the more deep-seated lesions of the mouth and throat. It is upon the cutaneous manifestations of syphilis, upon papular syphilides properly so-called, that it has most effect. But these superficial manifestations are precisely those against which syphilisation is most successful, as is easily seen by casting a glance upon the comparative summing up by Professor Boeck. Like syphilisation, blisters frequently fail against primary and tertiary lesions, and neither of the methods prevents relapses. But the method by means of blisters ought only to be employed when mer-

* *Études sur un nouveau traitement de la syphilis expérimenté à l'hôpital du midi, en 1857.*

curial treatment remains without effect and the severity of the symptoms calls for the adoption of energetic measures. The surfaces subjected to the action of blisters usually assume an aspect in keeping with the temperament of the patient; in lymphatic subjects, they become the seat of inflammatory accessions and are soon covered with impetiginous crusts. The cicatrices generally present a more or less deep sooty tint, to which the syphilis is not, perhaps, entirely foreign.

Another process by revulsion (tartar emetic plaster), tried by Dr. Hjort* at the instigation of Boeck, of Christiania, has equally been followed by good results, according to the report of the latter.† And despite the opposite opinion of the majority of the advocates of syphilisation, we are inclined to recognise in it nothing else than the result of an action analogous to that which may be produced by other revulsive means of equal power, but we believe that this mode of treatment is applicable in particular cases only which have resisted the ordinary means of treatment, such as mercury, iodide of potassium, preparations of iron, and even mineral waters. This opinion is, moreover, that of very experienced practitioners, such as Gibert, Bazin, Diday, &c.

VACCINATION.

With syphilisation I compare vaccination, another mode of treatment of syphilis, which had its origin in Russia, and which consists in treating that disease by multiple inoculations of vaccine virus. Imported into France by its inventor, Justin Lukomski, a captain in the Russian service, this method did not appear worthy of fixing the attention of the surgeons in whose presence it was tried. In Russia, however, it was carried out for a time, and at first some success was attributed to it. Numerous observations given by Yeltzinski‡ and by Kreyser§ make known the good results obtained by this means, namely, the more rapid disappearance of the primary, secondary, or tertiary lesions. But in these cases, as in those having reference to syphilisation, it does not appear that any allowance has

* See *Magazin for Lægevidenskaben*, t. xv., liv. iii.

† *Recherches sur la syphilis*, &c. Christiania, 1862, p. 473.

‡ *Radicale Heilung der Syphilis vermittelt Kuhpocken-vaccination*. Leipzig, 1860.

§ *Die Vaccination als Heilmittel gegen Syphilis* (*Medic. Central-Zeitung*, 1860, t. xix. p. 49).

been made for the course of syphilis left to itself, or at least not subjected to the action of any specific remedy. The considerations upon which we entered a short time ago apply, *à fortiori*, here, and if vaccination be really of some use, it is owing to the revulsion which results from the artificial production of a greater or less number of pustules. Moreover, this method, brought, towards the end of the year 1860, before the Physico-Medical Society of Moscow, and warmly discussed, was condemned with certain reservations.*

Such are, amongst the various therapeutic methods employed for combating syphilis, those which have attracted most attention. Far be it from me to pretend to have said all that is to be said upon a subject so vast; but I console myself for it, convinced that what is required by the physician is not so much the knowledge of therapeutic measures more or less eccentric as a sure and certain rule for doing no harm and for knowing how to render himself useful. But if, as I have laboured to prove, syphilis, like all the diseases to which man is liable, has a natural tendency to spontaneous recovery, it is clear that the duty of the physician (*interpres naturæ et minister*) is to facilitate this tendency. The important thing to do then is, to place the patient in the circumstances most fitted to bring about this recovery, and thus the first precept refers to hygiene; but since hygiene no longer suffices when lesions manifest themselves and compromise existence, therapeutic agents are then indicated. Amongst these agents, mercury and iodide of potassium, as we have already said, deserve the preference; but let us take care not to make of them, as we too often see done, a universal panacea applicable to every obscure case, for even when the syphilis is well marked those agents have their special indications.

If hygienic measures suffice in the period of the primary lesion, mercury is the therapeutic agent of the secondary period, that is to say, of the hyperæmic or phlegmaseous lesions disseminated on the

* See *Gaz. hebdomadaire de médecine et de chirurgie*, 1^{re} série, t. i. p. 567, 1864. Compare: Behrend, *Die Vaccination als Heilmittel der Syphilis* (Behrend's *Syphilidologie*, t. iii. part 2, 1861). Schuberg, *Versuche zur Heilung der Syphilis mittelst der Vaccination* (Badisch. Mittheil., No. 11, 1861). Sabborky, *Ueber die Heilung der Syphilis durch Blattereimpfung* (*Med. Mittheil.* Nos. 17, 18, 19, 1861; and *Saint-Petersbourg Med. Zeitschr.*, t. i. p. 335, 1861).

cutaneous and mucous surfaces. The bichloride and proto-iodide of mercury are the preparations to be preferred. The bin-iodide is more generally employed for the deep-seated syphilides. The iodide of potassium is better suited for combating the slow and chronic lesions which invade, in the last periods, the parenchymas. The duration of the use of these agents is necessarily variable, and it will easily be understood that no absolute rule can be given in this respect. As a general rule, so long as their influence upon the economy is beneficial and not debilitating, there is nothing to fear; but so soon as they produce anæmia, the employment of them must be suspended. A remedy is never an indifferent thing; it is either useful or deleterious, and it is the duty of the physician to ascertain which is the case. The therapeutic effect once obtained, we have only to wait and hygiene and time will complete the cure. Daily exercise short of fatigue, gymnastics, cutaneous frictions, baths, and the water cure will, in their turn, serve to restore the organism, which tends naturally to return to its normal primary condition.

PART VI.

LEGAL MEDICINE.

Fabre, Traité des maladies vénériennes, p. 15. Paris, 1773. *Bouchacourt*, Consultation médico-légale sur un cas de syphilis communiquée de l'enfant à sa nourrice par l'allaitement. *Revue Médicale*, 1840; et *Gaz. Méd. de Paris*, 1841, p. 534. *Diday*, Traité de la syphilis des nouveau-nés, &c. Paris, 1854. *Ditterich*, Neue medicinisch-chirurgische Zeitung, 1859; et *Gaz. Méd. de Paris*, 1865. *Cazenave*, De la transmission de la syphilis de l'enfant à sa nourrice, sous le rapport médico-légal. *Ann. des maladies de la peau et de la syphilis*, t. iv. p. 85. *Viennois*, De la syphilis transmise par la vaccination. *Archives gén. de médecine*, June, 1860, and following months. *Rollet*, De la transmission de la syphilis entre nourrissons et nourrices, au point de vue de la médecine légale, dans *Gazette hebdomad. de méd. et de chirurgie*, 1861, p. 589. *A. Tardieu*, Étude sur les maladies provoquées ou communiquées, dans *Annales d'hygiène publique et de médecine légale*, 2^e série, t. xxi., 1864, p. 104 et suiv. *Am. Ricordi*, Sifilide da allattamento. Milano, 1865, p. 157 et suiv. *Chababier*, Rapport sur un travail de M. le Docteur Viennois, ayant pour titre: *Étude médico-légale sur un cas de syphilis infantile*, *Gaz. méd. de Lyon*, July 16th, 1865.

SYPHILIS, by its nature even, and especially by the mode of its propagation, cannot fail to give rise to a great number of judicial actions and debates. Since the sixteenth century, the medico-legal question has been propounded, and it is of physicians that the information necessary for elucidating and solving it is demanded. The well-known story given by A. Paré of a nurse who infected her nursling, who transmitted the disease to its mother and the latter to her husband and other children, could no longer provoke a judicial discussion; but "the nurse was flogged privately, and would have been flogged publicly, had it not been for the fear of dishonouring the family." Documents relating to the medico-legal study of syphilis are rare, it is true, amongst the writings of the earlier syphilographers; but important materials already exist, however, on

the subject. Thus, as regards the transmission of syphilis by suckling, Brassavole estimates very correctly the two heads of the medico-legal question :—"Si infans lac exsugens," he says, "circa os pustulas contrahat, quæ extranei coloris sint, nec curari facile valeant, judica hunc morbi gallici contagium a nutrice recepisse. E contrario, si infans a berophotrophio receptus, pustulas per corpus habeat, sitque prave affectus, et nutrix in mammis, ac papillis, pustulas incidat quæ facile curari non possint, judica nutricem hanc ab infante recepisse contagium."

Later on, in a treatise upon venereal diseases which is not without value, Fabre writes :—"We know that fathers and mothers affected with syphilis have ruinous and dishonouring actions brought against them by nurses who have been infected by their nurslings. Under such circumstances, the judges can only decide from the evidence of the physicians and surgeons; it is important, therefore, that they should know how to determine when the child has really communicated disease to its nurse, and when the nurse has contracted the disease from another source. . . . To give an opinion in such a case, then, it is necessary to investigate the condition, not only of the child, but also of its mother; if it be proved that the latter had, during her pregnancy, either chancres, or virulent gonorrhœa, or some other well-marked symptoms of syphilis, there is reason to believe that the disease which has manifested itself in the nurse, since she began to suckle the child, has proceeded from the latter. But besides this circumstance, which is essential, it is also necessary to know the effects and the course of the virus in a nurse who has contracted it by suckling. The first part to be affected is the nipple. . . There supervenes in this part, first a painful phlogosis and then pimples which become converted into ulcers or chancres; the glands in the axilla or those of the neck very often become swelled at the same time, like those in the groins, where buboes appear when the chancres occupy the genital organs. After these initial symptoms, the nurse has others characteristic of confirmed syphilis, such as ulcers of the throat, pustules, ulcers upon the genital organs, which may be mistaken for disease contracted in those parts," &c.

It appears to us difficult to be more precise and more exact on this difficult subject, and at the present day, in spite of the recent acquisitions of science, we must still often be guided, with slight modification, by the sound observation of Fabre.

Hunter, Bell, and Swediaur altogether neglect the medico-legal

points of view in their otherwise so remarkable treatises. Neither has this point of view received more attention from Ricord, whose anticontagionist doctrines concerning secondary syphilis, and especially concerning transmission by nurslings to their nurses, have not always met with the approbation of magistrates. It is to be remarked, in fact, that under many circumstances the tribunals have pronounced condemnations in such cases, and that at the very time when the doctrines of the Hospital du Midi were in the highest repute.

Since the transmission of secondary affections has been proved, the medico-legal study of syphilis has entered into a new phase, thanks especially to the important works of the Lyons school and to those of M. Tardieu. That professor has collected numerous documents on this subject, and has summed up the various points with great clearness in an important work, which may be consulted with advantage.

M. Tardieu has taken for the basis of the division of his work the conditions of the transmission of syphilis. For one who looks at the subject in a medico-legal point of view only, nothing, certainly, could be better; but in a general work, in which the great divisions rest upon the evolution of the symptoms, it appears to me desirable for the unity of the subject to take this evolution into account in the exposition of the medico-legal portion. For that reason, I shall examine successively and, first of all, the conditions for the medico-legal decision to which each of the phases of the disease we are studying may give rise.

Primary lesion.—This lesion being, to make use of an expression already employed by Rollet, as it were the pivot upon which all the medico-legal bearings of syphilis must turn, it is in the highest degree necessary to have its characters clearly defined; let us, therefore, briefly recapitulate its principal features.

Chancre, the first effect of the contagion, appears at the point contaminated, after an incubation period, the duration of which varies from eighteen to thirty-five days, or even more. Usually single, it shows itself multiple in exceptional cases only. It is at first a small, reddish or brownish, painless pimple, sometimes covered with an epidermic pellicle, and which soon becomes ulcerated. The ulceration may nevertheless be wanting; it is, therefore, neither characteristic nor essential. The ulcer, when it exists, is more-over dry rather than moist, giving off, at first, only a kind of sero-granular emulsion, and not secreting true pus until the period of repair

has arrived. It varies considerably in form : sometimes it is a slight and almost superficial erosion (chancrous erosion), sometimes more extensive and deeper, cup-shaped, with a smooth surface and shining edges, of a whitish colour, with a dark-coloured and afterwards grey and lardaceous floor. The base (a most important item) is manifestly indurated, sometimes elliptical, anfractuous, irregular, sometimes having a well-defined and regular outline, sometimes resembling parchment. To the chancre is added, almost constantly, another lesion, that of the neighbouring glands, which become involved and form small ovoid tumours, independent, movable, and collected in groups.

Such are the general characters of the primary lesion ; they may be modified somewhat according to the various regions, but they always retain a physiognomy which renders them recognisable everywhere.

From the mere fact of the presence of this lesion at any point of the economy necessarily result the following conclusions :—There is syphilis,—syphilis acquired and not hereditary,—syphilis communicated at the very point actually diseased.

This last conclusion, which is of the greatest importance, necessitates a more detailed examination, for, according to the seat of the primary lesion, a logical deduction will frequently suggest a different mode of contagion, and, in many cases, the true origin of the disease. Let us, then, examine rapidly the various cases which may present themselves.

On the genital organs, the primary lesion is most usually the effect of sexual intercourse. Such is its origin, but, to make it the object of medico-legal investigation, there must be either an indecent assault, violation, or the wish of a husband or wife to obtain a divorce on the plea of a serious injury (venereal infection).

At the anus, chancre indicates unnatural intercourse, voluntary or forced.

Around the nipple, or on the surface of the breast, it most frequently results from suckling and is traceable to the nursing as its original source. This is a fact now well established, and only too frequent, of which the physician may convince himself easily enough in spite of certain difficulties which we shall attempt to make known further on.

About the mouth, chancre betrays, either contagion by means of dirty objects : glassblowers' tubes, drinking-glasses, spoons, mouth-

pieces of instruments, children's toys, &c. ; or direct infection from mouth to mouth, by kisses or other still more direct modes of contact ; or mediate transmission, as in the case of a nurse who communicates to her own child the lesion which a strange nursing has produced upon her breast.

On the nose, or on the pharynx, the primary lesion has hitherto been observed only as a consequence of certain operations, such as catheterism of the Eustachian-tube.

On the fingers and at other points of the body, chancre reveals clearly enough the manner of its importation ; thus it has been seen to appear upon the hand of an accoucheur, after obstetric operations, or even from a simple examination *per vaginam* ; on the arm of certain subjects after the inoculation of suspicious lymph ; lastly, on other parts of the body after surgical operations.

Under all these circumstances, and under many others which might arise, the physician has always in the end the same duties to perform : 1st, to establish the reality of the disease ; 2nd, to seek for the relation which may exist between the lesions presented by the various parties.

But we have made known the characters upon which is based the diagnosis of the primary lesion. It remains for us to point out the means of discovering the link which connects this lesion with that of the person accused. It is evident that this object cannot be attained except by comparing the lesions on both sides ; but since, in civil cases, personal examination can never be insisted upon, it follows that, in a certain number of cases, one of the elements of his opinion being absent, the physician will find himself incompetent. Under such circumstances, moreover, it is very rarely that judicial authority dictates direct inquiries. When such inquiries are authorised, it is by relying upon the characters which enable him to recognise the standing of the primary lesion that the medical jurist will be able to determine the origin of the disease and, by that very means, to convince himself whether any connection is possible between the lesions he is called upon to investigate. It is, therefore, important to know that chancre has, like most of the manifestations of syphilis, a peculiar evolution, and that it passes through successive phases. In this respect, we may recognise three phases in it ; a first phase of short duration, the papular period ; a second of ulceration or destruction, and a third of reparation and of cicatrization. In each of these phases, the primary manifestation presents a

different aspect. Without speaking of the papular period, which is still disputed by some authors, and which is really, perhaps, not constant, let us bear in mind that the physiognomy of ulcerated chancre, with its greyish, uneven, granular floor, is very different from the physiognomy of chancre in the process of repair and the surface of which is seen to be covered with fleshy granulations having a purulent exudation, and, *à fortiori*, from that of cicatrised chancre.

It is evident that the oldest chancre must be the original chancre; but we must refrain from being too positive on this point, especially when the lesions which are the object of comparison are at periods little remote from each other. Syphilitic chancre has, in fact, a course more or less rapid according to the age and the individual; but, its incubation period being variable, it becomes necessary, to establish a connection between two lesions of this nature, that there should exist between them a certain difference of age. It will easily be understood, however, that the circumstances in which the physician is placed do not furnish him, in this respect, with anything more than probabilities, for he can never render himself responsible for coincidences. But if we cannot lay it down as a principle that the first infected has certainly contaminated the other, we may at least affirm very positively that the latter cannot have transmitted the disease to the former. When secondary symptoms are met with on the one side, the task of the medical jurist is rendered more easy. In fact, it is clear that the subject of the primary lesion has not infected the other, and a connection is certainly possible between the affections in the two parties. It is thus that a nurse having a primary lesion on the breast cannot be accused of having transmitted syphilis to a child which has mucous patches of the mouth, and *vice versa*. Mucous patches on the nipple of the nurse cannot be attributed to a chancre in the mouth of the child. The inverse propositions belong to the domain of the possible, let us even say that they are frequently the expression of the truth.

Secondary lesions.—These lesions, when not the effect of hereditary syphilis, are preceded by the primary lesion, and do not appear, in general, until six or eight weeks after the first appearance of the chancre. They occupy the skin and mucous membranes, and consist in eruptions which are generally extensive or disseminated, but superficial and arranged in patches or in small points. It is unnecessary to repeat here the various characters of syphilides and

mucous patches, which have been spoken of already. Let us observe, however, that these manifestations are frequently accompanied by glandular adenopathies, the multiple seats of which are the groins, the posterior region of the neck, immediately beneath the roots of the hair, and sometimes the glands of the arms or of the lower part of the neck.

Like the primary lesion, the secondary manifestations bear witness to the reality of the syphilis; but, to ascertain their starting-point, we must look for the initial lesion, and this, as we know, sometimes persists in the form of a cicatrix for a very long time. But if the most careful examination do not enable us to discover anything, since this lesion must necessarily have existed in the case of acquired syphilis, we must demand of the individual affected information as to the time of its appearance, its characters, its duration, and its seat, so as to be able to determine on both sides the filiation of the morbid manifestations and to show the relation which may exist between them. Lastly, if there should no longer be any trace of the primary lesion, we must bear in mind that the outbreaks of secondary syphilis generally present a certain regularity in their evolution. Roseola and mucous patches are amongst the earliest; but nothing absolute can result from these data. The physician informed on this point will refrain from speaking in the affirmative when doubt exists; what is required of him is, in my opinion, evidence compatible with the actual state of our knowledge, and nothing else.

In a case in which secondary symptoms are observed on one side, while tertiary symptoms exist on the other side, it is very evident that it is the individual whose symptoms are those of the least advanced period who may have been infected by the other.

Tertiary lesions.—These lesions, which are characterised by peculiar gummy deposits and deep ulcers, do not usually supervene in less than a year from the commencement of the syphilis, and, in general, are much too remote from the moment of the contagion for it to be possible to determine their filiation and to pronounce upon the source from which they spring. Consequently, if the diseased individuals have both reached the tertiary period, the physician must content himself with pointing out the reality of the syphilis. The same would not be the case if tertiary symptoms were met with in one of the two parties at the same time with primary or secondary manifestations in the other. Then, evidently, the latter could not be accused of having transmitted the disease.

Such are the data which a medical jurist may obtain from the knowledge of syphilitic affections and from their course. Let us now consider from another point of view the medico-legal study of syphilis, and examine that disease in reference to the modes and conditions of its transmission. If the syphilis has been communicated by sexual intercourse, the question for the physician, in case of an action for divorce, consists in recognising the existence of syphilitic affections in the parties, in determining the origin of them, and in connecting them one with another by means of contagion, for, says Professor Tardieu, if it too often happens to us, in the practice of our profession, to meet with such cases as unfortunately cannot leave any doubt in our minds, how much more difficult and uncommon is it for us to be in a position to apply to these cases all the rigour of a medico-legal demonstration. And, adds the same author, I do not hesitate to lay down as a general precept the duty of abstaining, reserving, of course, those exceptional cases which the conscience of each physician will always know how to discriminate.

In the transmission of syphilis by suckling, numerous instances of which will be found in the remarkable report quoted above, it is to be remarked that the cases brought into court have most frequently been on the part of the nurse, much more rarely on the part of the parents. In the first case, as M. Tardieu points out, the complaint is generally made late, whence arise peculiar practical difficulties, and especially the impossibility of confronting, in a common inquiry, the nurse and the nursling, which will sometimes have died. In the second case, the parents only bring a defensive action, for the purpose of freeing themselves from the responsibility imputed to them. The duty of the physician then consists in establishing the reality of the disease and the successive transmission according to the date, the seat, and the form of the specific lesions; 1st, by the examination of the child and the appreciation of the facts which concern it; 2nd, by the examination of the nurse, either directly, or indirectly. It is with this indirect information, often very useful, that must be ranged whatever refers to the children and husband of the nurse suspected, as well as to other nurses who may have taken part in the suckling of the diseased nursling.

As regards the examination of the child, we must bear in mind what has been established above, viz.: that it is between the second and third month that the first signs of congenital syphilis usually

show themselves; that the most contagious and characteristic element is the mucous patch, which has for its most frequent seat the opening of the mouth, the nasal orifices, the circumference of the anus, and the genital organs; and then that there supervene eruptions of vesicular, pustular, or bullous form, lesions of the nails, interdigital ulcerations, and a persistent and obstinate coryza. These various lesions are followed in general, as we already know, by a state of cachexia more or less marked.

As regards the nurse, we must endeavour to ascertain, as far as possible, what was the state of her health before she began to suckle the suspected child; but what it is important to establish is that the appearance of the symptoms which she presents was posterior to that of the disease in the child. We have already stated the data upon which a physician should found his opinion in such a case: let us repeat that the first symptom which presents itself in the nurse, in the by no means uncommon case of transmission by a nursling affected with hereditary syphilis, consists in an indurated pimple at the extremity or at the base of the nipple. This pimple ulcerates, becomes enlarged, and is soon accompanied by axillary adenopathies; * later on supervene syphilides, alopecia, and adenopathies of the cervical glands. No lesion exists at the very first about the genital organs, but only later on in the course of the eruptions of the secondary period. "The children of the nurse," justly remarks Professor Tardieu, "are, as it were, a very certain and very delicate test which the expert should interrogate carefully. Several eventualities may arise. The children which the nurse has had before taking charge of the infected nursling may continue healthy during the whole period of the disease in the mother. Or, healthy at first, they may become diseased in their turn, not by suckling, but in consequence of repeated contact and the many ways presented for contagion. If the last born child, as frequently happens, shares the breast with the strange nursling, it runs every chance of contracting the disease at its source. There is one peculiarity of the greatest importance which, when it presents itself, is truly significant. This woman, before taking charge of the diseased child, shall have

* See the excellent inaugural thesis of Dr. Viennois, *Recherches sur le chancre primitif et les accidents consecutifs produits par la contagion de la syphilis secondaire*, Paris, 1860, in which there is a very minute description of chancre of the breast.

had several children and not lost one of them; since that period, she miscarries or her children die at an early age." As regards the husband, inquiry should be made into the state of his health and a personal examination of him made; but we must bear in mind the fact of a possible coincidence.

Another circumstance, the recognition of which would throw the greatest light upon the inquiry and clear up the expert's doubts, is the case in which several persons, having frequented a suspected child, shall have presented the symptoms of syphilitic infection. Thus a nursling may have infected several nurses to whom it has been given in succession, members of the family who have made use of objects belonging to it, or even strangers who have approached, touched, and kissed it.

Examples of this have been quoted by Stark, Bardinet, Diday, and other authors. It will easily be understood how important it is to examine, as carefully as possible, in such cases, the nurses and all those who have been in more or less direct relation with the child.

After this examination, the difficulties will not be great. To establish the connection, we must rely upon the circumstance that the syphilis in the nurse commenced in the breast at a time when her genital organs were intact. The important point, according to Professor Tardieu, is to ascertain exactly, at one and the same time, the state of the breast and that of the genital organs. In fact, even if the examination of these organs be made late, it may still enlighten the expert concerning the point at which the disease has commenced and the course which it has run.

The different evolution of syphilis, accordingly as it is acquired or hereditary, is another point which is not without importance, and upon which Rollet has very justly insisted. It is that, if the nurse contract syphilis otherwise than from her nursling, the contagion produced in the latter will manifest itself by the primary lesion, and not by mucous patches, as usually happens in congenital syphilis, in which the primary lesion is always wanting.

As mention has been made elsewhere (*Ætiology*) of the various modes of contact capable of transmitting syphilis, I shall merely recapitulate here the facts, always very complicated, resulting either from contact with a part or object contaminated, or from inoculations caused accidentally by circumcision, by tattooing, by vaccination, by the carelessness of some operators in using contaminated instruments, or even practised voluntarily for an experimental or

therapeutic purpose. In all these cases, of which a careful study will be found in the excellent report of Professor Tardieu, the duty of the expert is always the same; it consists in establishing the reality of the syphilis and in determining the possibility of a connection between the lesions presented by the two parties. There ends the task of the physician; that of the magistrate is to determine the rights of each person.

APPENDIX.

ON SUPPOSED SYPHILITIC AFFECTIONS IN ANIMALS.

Boerhaave, Traité de la malad. vénér., trad. fr. Paris, 1753, p. 16. *Hunter*, Complete Works. *Swediaur*, Traité des malad. vénér., t. i. p. 7. Paris, 1801. *Auzias-Turenne*, Transmission de la syphilis aux animaux. *Gaz. médic de Paris*, 1844, pp. 709, 726. *Helot, de Castelnau, and Jules Davasse*, Nouvelles expériences sur l'inoculation de la syphilis aux animaux. *Gazette des hôpitaux*, No. 27, 1849. *Cullerier*, Archives générales de médecine, 4^e série, tome viii. p. 50, 1854. *Robert de Welz*, Deux réponses à deux lettres de M. le Docteur Ricord sur l'inoculation de la syphilis aux animaux. Würzburg and Paris, 1850. *Diday*, Transmission de la syphilis de l'homme aux animaux. *Gaz. méd. de Paris*, 1851. *Sperino*, Traité de la syphilisation. *Manoury* (de Chartres), dans *Gazette hebdom. de méd. et de chir.*, 1855. *Follin*, Maladie du coït chez les chevaux et syphilis, dans *Archives génér. de méd.*, 1859, t. i. p. 332, *Revue critique*. *Lafosse*, Maladie vénérienne des solipèdes. *Journal des vétérinaires du Midi*, Nov. et Dec. 1860. Analyse dans *Gaz. hebd.*, p. 108, 1861.

To know whether syphilis is a disease confined to the human race is a question which has long fixed the attention of observers, and which, in my opinion, has its place marked out in this work. This question is a double one; firstly, does there exist in certain animal species * a disease comparable to, or identical with, syphilis in man; secondly, is syphilis transmissible to animals?

* I relate here, as a mere curiosity, that one of the earliest syphilographers, Ruiz Diaz de Isla, makes mention of syphilis in cabbages. "At Baize, my native place," he says, "I have observed cabbages affected with syphilis. This disease is communicated to them by stagnant waters in which the linen of syphilitics has been washed, and which has then been used to water them. The excrescences on these plants so closely resemble the pustules of the *French* disease that children cut them off with scissors and put them on their faces to imitate that disease. Moreover, other pot-herbs also suffer from that disease, no less than a great number of animals.

Observation teaches us that there are, in the horse, affections of the genital organs transmissible, as in man, by coitus; and, which is curious, side by side with certain forms which infect the economy, and in which the disease becomes generalised as in syphilis, there are others which never occasion in the individual more than a simple local derangement.* Here, therefore, the dualistic doctrine reappears. In Germany, Rodloff admits, in this respect, two distinct diseases: the one an unimportant exanthem which does not generally extend beyond the external organs of generation; the other a malignant affection which alone deserves the name of *disease from coition*.

But like the physicians, veterinary surgeons are not agreed as to the nature of these diseases. Contrarily to Rodloff, Hertwig † is of opinion that only one disease from coitus exists, and that it appears in two forms, the one benignant, the other malignant. Characterised at its onset by the appearance, on the external genital organs, of bullæ, ulcerations, spots, &c., this disease may either become arrested spontaneously or complicated with general derangements and nervous phenomena and be transmitted in one or other of these two forms.

The disease from coitus has prevailed in Russia and in Prussia since the end of the last century. Observed in 1796 and 1799 in the district of Trackene, it persisted there until 1801. In 1815, it was observed to appear at Witthowo, near Bamberg; it showed itself from 1816 to 1820 in Hanover, and in 1817 and 1818 in Lithuania.

It was found in 1821 in various parts of Northern Germany, in 1826 in Silesia, from 1827 to 1830 in Bohemia and in the canton of Berne. It was observed for the first time in France, in the course of the year 1830, by Lautour, ‡ who described it under the name of *contagious disease of the genital organs of the stallion and*

* These same affections would appear to be met with also in the bovine race. All the cows put to a bull upon whose penis was a condyloma the size of a nut, were affected with a mucous discharge which continued several weeks, and required, in some cases, the employment of astringent injections (*Archives de méd.*, 1840, p. 358).

† See *Maladie de l'étalon*, in *Magasin de médecine vétérinaire*, 1842. Analysed by Delafond, *Recueil de méd. vétér.*, 1852, p. 897.

‡ See *Recueil de méd. vétér.*, 1834, p. 118; *Journal théorique et pratique*, 1832, p. 258.

the mare. In 1840, it broke out in Pomerania, and it is then that it was observed by Rodloff, inspector of the breeding places of Posen.* About the same time it prevailed in France, where it was described by Dayot under the name of contagious eczema.† Balar-dini observed it in the Lombardo-Venetian kingdom.‡ While England has hitherto been preserved from this disease, the North of Africa has long been subject to its attacks. The disease from coitus has been observed by Signol § in the province of Constantine, and General Daumas has seen it prevail amongst Arab horses in the same province, where the natives give it the name of *el dourine*. || Fixed since the year 1857 in the department of the Upper Pyrenees, this disease has been the object of interesting researches and experiments on the part of the veterinary surgeons of the Toulouse school. Prince and Lafosse ¶ have studied it carefully, at least in reference to contagion. We shall speak successively of its two forms, the coital exanthema and the disease from coitus properly so-called.

At its commencement, the coital exanthema shows itself in the stallion in the form of œdema more or less marked, affecting the penis and sheath so as sometimes to produce paraphymosis. After a few days, the œdema decreases and towards the end of the first week, phlyctenæ appear on the lateral and inferior surfaces of the penis or on the glans. On the third day, in general, these phlyctenæ dry up; but they sometimes leave behind them ulcers surrounded by a red areola, the edges of which are sometimes smooth and continuous, sometimes broken and wrinkled, and having a whitish or lardaceous floor. These ulcers heal in six or eight days, leaving behind them a smooth, white cicatrix. The general symptoms, such as fever, loss of appetite, &c., are scarcely appreciable; erection and coition are painful. A day or two after

* See *Receuil de méd. vétér.*, 1855, p. 241.

† *Mém. de la Soc. impér. et centr. d'agriculture*, 1847-1848. *Receuil de méd. vétér.*, 1850, p. 92.

‡ *Observ. de syphilis chez les chevaux. Gazette medica Lombarda*, 1849.

§ See *Comptes rendus de la Soc. impér. et centr. de méd. vétér.*, 1853; et *Receuil de méd. vétér.*, 1854, p. 127.

|| See *Receuil de méd. vétér.*, 1855, p. 476; et *Comptes rendus de la Soc. impér. et centr. de méd. vétér.*

¶ See *Journal des vétérinaires du Midi*, 1853, p. 145; 1855, p. 1; 1860, Nov. et Décemb.

having been covered, the mare presents uneasiness and a certain degree of agitation. The vulva becomes swelled generally or partially; from the vagina and external surface of the labia majora flows a whitish viscous fluid, then œdema supervenes which occupies the perineum and descends as far as the teats. About the third or fourth day there appear upon the genital organs yellowish bullæ containing an acrid serous fluid, lesions which finally terminate in white cicatrices. Attention to cleanliness suffices, in general, for the cure of this disease, which is entirely distinct from the disease from coitus, but which is, to a certain extent, comparable to the local lesions of the genital organs in man.

The disease from coitus proceeds, like the coital exanthema, by local determinations which it is possible to compare to the specific indurations of syphilis. The horse's sheath, and sometimes the scrotum, are swelled, hot, and painful. The swelled mucous membrane of the urethra forms an impediment to micturition, and the urine is retained in the bladder. Lastly, the vesicles of coital exanthema or slight erosions are observed. In the mare, the œdema which shows itself in the perineum and on the abdomen becomes transformed into a lardaceous induration, which soon disappears. A yellowish white fluid flows from the vulva; later on, the mucous membrane becomes swelled and assumes a grey or marbled tint. The clitoris becomes puffy and the matter secreted is of a greenish yellow colour. Lastly, small vesicles appear upon the mucous membranes, and Hertwig states that he has twice seen rounded ulcers involving the entire thickness of the vaginal mucous membrane.

To these symptoms, which are purely local and comparable to the primary lesion of syphilis, succeed symptoms of a different kind, secondary symptoms which show the general infection of the organism. It is about four or six weeks after the first appearance of the disease that these new symptoms show themselves. The coat becomes rough, the skin exhales a bad odour and the eye grows dull; then cutaneous tumours, having their seat in the thickness of the skin, show themselves first upon the croup and spread to the costal regions, chest, and thighs; they are comparable to the lumps produced by the stings of insects, assume a circular form surrounded by a distinct border, and have a diameter which varies from one to three centimeters. Contrarily to other observers, Hertwig asserts that there sometimes proceeds from the centre of these patches

a yellowish serum which agglutinates the hairs (see *Arch. méd., loc. cit.*). It is to be observed that allusion is made here to cutaneous patches, and not to sub-cutaneous tumours as is seen in farcy and glanders; moreover, the lymphatic cords and multiple abscesses peculiar to farcy are wanting.

The mucous membranes may take part in the disease; those of the nose, the bronchi, and even of the eyes may be injected from the commencement of the disease; the inguinal and sub-glossal glands are sometimes swelled and indurated. Later on appear fresh manifestations, arthritis, paralysis of motion, partial or general atrophy, erythematous or pseudo-farcinous eruptions of pimples; and, lastly, as exceptional phenomena, coxo-femoral luxation and spontaneous fractures have been observed (Lafosse). The hind-quarters are the most frequent seat of paralysis, which is generally connected with an affection of the spinal cord as yet little understood. This disease has a duration varying from two months to three years, is rarely cured, and the animals generally sink under a horrible marasmus. It rages for two or three years in a locality, and usually leaves it after that time to reappear in places more or less distant.

The disease from coitus is contagious; this is a point upon which almost all veterinary surgeons are agreed, and which is now beyond all doubt since the performance of conclusive experiments at Toulouse. Fifteen perfectly healthy mares were put to stallions affected with the disease from coitus and brought from Tarbes. Of this number, five presented in a slight form the symptoms of the disease and recovered spontaneously; five were severely affected, of which one was cured and the other four died. Of the two stallions which covered these mares, one died of the disease from coitus, the other presented slight symptoms only. These cases evidently require no commentary, but it appears that contagion by inoculation takes place with difficulty; many experimenters, including Lafosse, have failed to inoculate the disease by puncture, or even by frictions upon the genital organs. Hertwig asserts, however, that he has sometimes succeeded in transmitting the disease by means of friction made in the vagina with the virulent matter.

Such is, in animals, this disease, which presents a sufficiently close analogy with syphilis to have led certain observers to think that it may have resulted therefrom. The opinion which consists in recognising a causal connection between the two diseases is not, it

must be admitted, generally accepted. Most veterinary surgeons regard the disease from coitus as entirely distinct from syphilis. Lafosse, who shares this opinion, bases his views upon the circumstance that no one has yet pointed out in the disease from coitus the corroding ulcers or indurated chancres of the genital organs, the cervical and axillary buboes, the moist pustules of the margin of the anus, the periostoses, the exostoses, &c. These considerations are not without value, and I think, with the Toulouse professor, that all that can be done is to institute a comparison between the diseases in question. But a case recently given by Professor H. Bouley* would tend to suggest the idea that doury (disease from coitus) may, after all, proceed from syphilis in man. An individual, yielding to a vulgar notion, and desirous of curing himself of a syphilitic affection of the penis, introduced that organ into the vagina of a female ass, which afterwards communicated the disease from coitus to a male ass which, in its turn, gave it to other females. Let us add, however, that in spite of this case, M. Bouley does not believe in the identity of the disease from coitus with syphilis.

To sum up, there exists in animals, and especially in horses and asses,† a disease transmissible by sexual intercourse; but notwithstanding many points of contact, that disease differs from syphilis in man. Moreover, it is not proved that syphilis can be transmitted from the human race to animals.

Contrarily to Van Helmont, whose opinions as to the first origin of syphilis we have already made known, Hunter‡ maintained that the syphilitic poison had its birth in the human species, and that no other animal but man was known which could be infected with it.

* *Bull. de l'Académie de médecine*, Sept. 20th, 1864.

† See Vidal, *Gaz. méd. de l'Algérie*, 1863. P. Garnier, *Union médicale*, 1863.

‡ Hunter, *Treatise on the venereal disease*. Boerhaave (*Traité de la maladie vénér. trad. fr.*, Paris, 1753) quotes from the *Ephémérides des curieux de la nature*, that a dog perished on the spot from having swallowed the saliva of a person under treatment for syphilis. Swediaur (*Traité des malad. syph.*, Paris, 1801, p. 7) states that he has seen dogs affected with gonorrhœa and ulcers on the penis, as well as stallions; but there is nothing to prove that these affections were syphilitic. From the experiments he has performed, Turnbull concluded that neither dogs nor rabbits were susceptible of being affected by the syphilitic virus by inoculation.

Turnbull, Babington, Ricord, de Castelnau,* and other observers have in vain sought to inoculate syphilis in animals. The question appeared finally settled when, in 1844, Auzias-Turenne succeeded in transmitting to a young ape ten or twelve perfectly well-marked chancres.†

Let us take note of this case and let us observe that the number of chancres inoculated by no means proves that there was any transmission of constitutional syphilis. Experiments performed in 1845 by Cullerier ‡ led to the recognition of the fact that syphilis could not be transmitted to animals. Auzias-Turenne did not, however, consider himself defeated. It became necessary to inquire whether the lesions asserted to have been transmitted from man to the ape were susceptible of being grafted afresh upon man. But, in 1850, Robert de Wetz § tried the experiment upon himself with pus taken from a sore developed upon an ape and upon a cat in consequence of inoculation from a human chancre. He made four inoculations upon his arms and produced chancres which developed themselves for some days and were then cauterised. In the following year, Diday || also inoculated successfully in a man the pus proceeding from a chancre existing in a cat; the results of these inoculations were soft chancres. Since that time, several experimenters have in vain attempted the inoculation of syphilis in animals, having been able to produce in them local lesions only. Melchior Robert, having undertaken experiments in reference to this subject, never obtained constitutional manifestations. Maunoury, ¶ who introduced into the cellular tissue of rabbits fragments of indurated chancres taken from patients, did not succeed, any more than Sigmund, of Vienna, in producing other than local lesions. Basset, in more recent experiments, has arrived at the same results.**

* De Castelnau, *Recherches sur l'inoculation*. Paris, 1841, p. 479.

† Communications to the Academy of Sciences and to the Academy of Medicine. See *Bulletin de l'Académie de médecine*. Paris, 1844, t. x. p. 212.

‡ *Arch. génér. de méd.*, 4^e série, t. viii. p. 54, 1845. Jules Davasse, *Nouvelles expériences sur l'inoculation de la syphilis aux animaux* (*Gaz. des hôpitaux*, March 6th, 1845).

§ Ricord, Letters xv. and xvi. in, *Lettres sur la syphilis*, *Union méd.*, 1850. Robert de Wetz, *Deux réponses à deux lettres de M. Ricord*, &c. Paris, 1850. See also *Gazette médicale*, 1850, p. 544. Auzias-Turenne *ibid.* p. 841.

|| *Gaz. méd. de Paris*, 1851, p. 809. ¶ *Gaz. hebdomad.*, 1855, p. 548.

** See Rollet, *Recherches sur la syphilis*, p. 11, 1861.

Do not these facts suffice to settle the question? It is allowable to think so. Since it was not possible, in any of the cases quoted, to ascertain in the animals the existence of syphilitic manifestations, there is naturally reason to believe that constitutional syphilis is not transmissible to them. But fresh researches appear necessary. One of my colleagues of the Biological Society, Dr. Legroes, has recently devoted himself to these researches. He failed entirely with two dogs and four rats which he inoculated with syphilitic chancres, but succeeded, on the contrary, with two guinea-pigs. One of these animals was devoured, after a short time, by a dog. As for the other, it died from the consequences of the infection produced by the operation which it had undergone. The following is its history: On the 1st of November, 1867, this animal received under the skin of the thigh a fragment of an indurated chancre taken from a patient three hours before the inoculation. During the first few days nothing remarkable occurred. A fortnight later, there appeared an ulcer covered with a dry bluish crust which spread gradually. At the same time there was a fulness rather than induration of the base of the ulcer, and some of the glands in the groin were enlarged. On the 7th of December, this animal was presented to the Biological Society, where my colleagues and I recognised these various facts. The ulcer, covered with a dry, black crust, was almost as large as a two-franc piece. Two months after the inoculation, it certainly presented that diameter, and it was only a fortnight later when it began to cicatrise. But at that time the animal was emaciated and weak; the hair began to fall off, the feet were the seat of small superficial erosions, which were not without analogy with those observed in pemphigus, and in the region of the groins were observed not only several small ulcers but also several cutaneous nodules and glandular tumours. These latter tumours were equally common wherever lymphatic glands existed. It was under these circumstances and after progressive wasting away that death took place spontaneously on the 17th of April, 1868. The animal was then sent to me and I made the post-mortem examination very carefully. The appearances found were as follows:—The hair was comparatively scanty; in the left flank, at the point of insertion of the hairs, was a deep round ulcer, involving the skin and even a part of the subjacent cellular tissue. The ulcer on the thigh was not entirely cicatrised; on the feet were slight erosions. Most of the lymphatic glands of both groins presented important modifications.

They were larger than natural and at the same time very hard, and connected with each other by unchanged conjunctive tissue. They formed on each side an elongated chaplet from four to five centimeters in length; their substance was dry, whitish, of firm consistence, and homogeneous. The lumbar glands, those surrounding the trunk of the cœliac artery especially, formed, by their accumulation, very resistant masses; nevertheless, they presented the characters of the inguinal glands, that is to say, extreme hardness and a slight increase of volume. The lymphatic glands of the posterior cervical region were also changed, as were several of the sub-maxillary and axillary glands. Microscopical examination revealed an abundant proliferation of the conjunctive elements of these glands. In the thickened web were found small groups or masses of nuclear and cellular elements of new formation; the lymphatic elements had partly disappeared. In the flanks, near the anus, were seen three small rounded tumours, of the size of a cherry-stone, situated in the deeper layers of the dermis and in the adipose cellular tissue. These tumours were greyish, firm at their circumference, but softened at their centres. They bore a striking resemblance to the gummy tumours observed in man. The muscles and the bones were, like the articulations, intact. On the surface of the left tunica vaginalis were seen six or eight white, miliary patches. In the globus major and testicle there existed a rounded tumour of the size of a large pea, very firm and of a greyish colour; at the centre of this tumour was found a point of softening, consisting in a white, lactescent fluid formed of molecular granules, fatty granulations, and granular cells, while the hard portion presented nuclei and small round cells in a thin web of connective tissue. At the sternal extremity of one of the ribs an enlargement having at its centre a small, white, dry, and granular mass. The kidneys and supra-renal capsules were mottled and injected, without any other appreciable change. The hard and greatly enlarged bronchial glands compressed the trachea at its termination. The lungs were everywhere congested, had a fleshy appearance, and presented on their surface several small, whitish protuberances. On section they appeared mottled, with disseminated greyish nuclei, as is the case in the form of pneumonia peculiar to syphilitic new-born children. The heart did not present anything special. On the middle portion of the spleen was a slight transverse depression, in the vicinity of which were seen small infarctus of blood. In the lower third of the organ was an elon-

gated, yellowish infarctus. The glands situated in the course of the hepatic vessels were indurated and enlarged. The liver also was enlarged and presented, on its concave surface, and towards the left lobe, three slight depressions, each of which was about a centimeter in length; the convex surface of this organ was uneven, knobby, and as it were puffy at some points. At these same points there was a yellow colour and evident induration; on section, there was seen a yellow tissue studded with greyish points, upon a yellow and mottled floor. Thin slices of the organ examined under the microscope showed the existence at the periphery of some of the lobules, of small islets or masses of round nuclei and of young cells. The bladder contained a compact, white substance, placed upon a pedicle, which was prolonged into the canal of the ureter. Under the microscope, this substance was seen to be composed of greyish, molecular granulations endowed with motion.

The importance of this case will be evident to every one. The infection is positive, and doubt can exist only as to its syphilitic character. An absolute certainty on this point cannot be attained unless, by the aid of the morbid products furnished by the animal infected, syphilis were transmitted to man. The responsibility of such an attempt is so evident that it will easily be understood that neither Dr. Legroes nor I were willing to assume it. Nevertheless, in its actual state, this case, by reason of its peculiar evolution and of the lesions discovered at the post-mortem examination, appears to me fitted to shake the conviction of those who assert that syphilis is not transmissible to animals. For my own part, I am inclined to believe in this transmissibility, at least in certain species of animals.

Although better proved, the communication of soft chancre to animals has also not yet been sufficiently studied. In fact, experimenters have succeeded, in some cases, in inoculating non-specific pus and in producing lesions analogous to those produced in animals by chancrous inoculation. Lichtenstein* affirms that lymph taken from the pustules produced by frictions with tartarised antimony is inoculable, and Dr. A. Rienzi asserts that he succeeded in inoculating simple ecthyma and the pus of leech-bites. But, after these experiments, we ask ourselves whether any pus might not produce the same effects, and it is allowable to retain some doubt as to the reality of the transmission of soft chancres from man to animals.

* *Journal de Hufeland.*

In a recent discussion, which took place before the Academy of Medicine, the question of syphilis in animals was discussed. Dr. Vernois * quoted a case tending to establish the transmissibility of syphilis from man to animals. A cat which was accustomed to eat lint impregnated with sanious and purulent matter of chancres, mucous patches, and venereal ulcers of patients in the Hospital du Midi, sank under syphilitic cachexia, after having for a long time presented on its lips and in its throat characteristic ulcers. At the post-mortem examination several of the bones were found to be affected with periostosis, exostosis, and caries. But, not only is this case single, it is not even entirely irreproachable, as Ricord and Velpeau have not failed to show.† In reference to this subject, moreover, the eminent surgeon of the Hospital de la Charité reminds us that he had in vain attempted with Bretonneau, in 1817 and 1818, to inoculate all the purulent matters produced by syphilitic lesions in dogs, sheep, and rabbits. M. Leblanc, for his part, points out that he watched for years animals he had inoculated with syphilis without the least vestige of a manifestation having shown itself. M. Depaul, however, announced that he had seen cases of transmission of syphilis from man to the ape, and even to animals of other species. The question is not settled; but it cannot be doubted that animals are a soil very ill adapted to the development of syphilis; and if it be true that this disease may germinate in their organisms, it soon dies out *in situ*. True syphilis, that which we have been following through all its phases, is then, to sum up, the melancholy appanage of humanity.

* See *Bulletin de l'Acad. de méd.*, Sept. 14th, 1864.

† *Transmission de la syphilis de l'homme aux animaux. Bulletin de l'Acad. de méd.*, Sept. 20th, 1864.



INDEX.

- | | | | |
|---|-------------------------|--|---------|
| Adenopathies, secondary - - - | i. 180 | Cauterisation in period of incubation | ii. 304 |
| Ætiology of syphilis - - - | ii. 208 | CAZENAVE, pills of - - - | ii. 316 |
| Africa, syphilis in - - - | i. 53 | — on diseases of nails - - - | i. 159 |
| Albuminuria - - - | i. 295, ii. 77 | — incubation of syphilis - - - | i. 68 |
| ALIBERT, syphilide - - - | i. 136 | Cephalalgia, localised - - - | ii. 45 |
| Alopecia - - - | i. 153, i. 217 | Cerebellum, affections of, symptoms of | ii. 71 |
| Amaurosis - - - | i. 247, i. 344, ii. 109 | — membranes of, gummy tumour of | ii. 44 |
| Amboyne pimple - - - | i. 38 | Cerebral softening - - - | ii. 49 |
| America, syphilis in - - - | i. 57 | Chancre, absence of - - - | i. 93 |
| Angina - - - | i. 161 | — diphtheritic condition of - - - | i. 102 |
| Animals, syphilis in - - - | ii. 363 | — dry papule form of - - - | i. 81 |
| Aphasia - - - | ii. 45 | — extra genital, frequency of - - - | i. 87 |
| Arsenic, use of - - - | ii. 299 | — frequency of (relative) - - - | i. 99 |
| Arsenite of copper, ulcers from - - - | i. 119 | — from secondary syphilis - - - | ii. 250 |
| Arteries, affections of - - - | i. 400 | — gangrene of - - - | i. 101 |
| Asia, syphilis in - - - | i. 49 | — indurated (Bibliography) - - - | i. 74 |
| BADER, choroiditis - - - | i. 200 | — indurated, results of irritation of | i. 89 |
| BELLOSTE's pills - - - | ii. 313 | — in medico-legal aspect - - - | ii. 355 |
| BISSET, syphilides - - - | i. 136 | — larvated - - - | i. 86 |
| Blood, changes in (acquired) i. 17, i. 380 | | — not self-inoculable - - - | i. 86 |
| — changes in (hereditary) - - - | ii. 155 | — phagadænic - - - | i. 101 |
| — contagion of, in syphilis - - - | ii. 230 | — and rupia - - - | i. 212 |
| BOECK, on syphilisation - - - | ii. 346 | — significance of - - - | i. 73 |
| Bones, affections of - - - | i. 188, i. 233 | — simulated by other affections | i. 119 |
| Brass, use of - - - | ii. 298 | — soft - - - | i. 95 |
| Brain, affections of, cases of i. 344, ii. 67 | | — followed by syphilis - - - | i. 103 |
| — affection of, case of - - - | i. 344 | — treatment of - - - | ii. 304 |
| — affections of, albuminuria in - - - | ii. 77 | — urethral - - - | i. 86 |
| — affections of, diabetes in - - - | ii. 72 | — varieties of - - - | i. 79 |
| — gummy tumours of - - - | ii. 52 | Chancrous erosion - - - | i. 82 |
| — inflammation of - - - | ii. 48 | China, syphilis in - - - | i. 8 |
| — membranes of, affections of - - - | ii. 38 | Chorea following hemiplegia - - - | ii. 67 |
| Breast, affections of - - - | i. 227 | Choroiditis in acquired syphilis - - - | i. 200 |
| BRISTOWE, case of cyst of brain - - - | ii. 57 | — in hereditary syphilis - - - | ii. 170 |
| Bronchitis - - - | i. 161, ii. 12 | Cirrhosis of liver - - - | i. 332 |
| — ulcerative - - - | ii. 12 | Condylomata in acquired disease - - - | i. 172 |
| BRUNN, epidemic - - - | i. 29 | — in hereditary disease - - - | ii. 140 |
| Bubo - - - | i. 108 | | |
| Carotid artery, obliteration of - - - | ii. 39 | | |

- Congenital (*see* Hereditary)
 Connective tissue, affections of - i. 219
 Contagion, modes of - - - ii. 229
 — summary of facts of - - - ii. 252
 Copper, arsenite of, ulcers from - i. 119
 Cornea, lesions of - - - ii. 109
 Coryza in hereditary syphilis - ii. 147
 CULLERIER's pills - - - ii. 315
 CURLING on orchitis, &c. - - i. 273
 Cysts, probably gummy tumours ii. 56
- DAVASSE, mucous patches - - i. 174
 Deafness - - - ii. 27, ii. 111, ii. 171
 Development, arrest of, with hereditary syphilis (case) - - - ii. 27
 DEVILLE, mucous patches - - i. 174
 Diabetes - - - ii. 72
 DIDAY, incubation of syphilis - i. 72
 — change of voice - - - i. 166
 Diet in syphilis - - - ii. 335, 340
 Diphtheritic condition of chancre i. 102
 Duality of syphilis - - - i. 103
 DUPUYTREN's pills - - - ii. 315
 Dura mater, lesions of - - - ii. 38
- Ear affections of - - - ii. 111
 Ecthyma - - - i. 210
 Encephalitis - - - ii. 41
 Epidemics - - - i. 25, 29
 Epilepsy, syphilitic, distinct from true ii. 46
 Epileptic convulsions with tumour of dura mater - - - ii. 39
 Eruption, local, of syphilis - i. 74
 Erythematous syphilides - - i. 139
 Europe, distribution of syphilis in i. 45
 Exophthalmos, case of - - - ii. 101
 Exostosis of sphenoid, &c., causing amaurosis - - - i. 247
 Eye, affections of (acquired) - i. 195
 — in hereditary disease ii. 27, ii. 168
 Eyeball, protrusion of - - - ii. 101
 Eyelids, lesions of - - - ii. 107
- Face, paralysis of, (*see* Nerve)
 Fever, syphilitic - - - i. 125
 Fingers, affections of - - - i. 271
 Fracture, spontaneous - - - i. 243
 Framboesia - - - i. 30
 French disease, the - - - i. 21
 Fumigations, use of - - - ii. 311
- Gangrene with chancre - - - i. 91
 GEE, spleen in hereditary syphilis ii. 153
- GIBERT's syrup - - - ii. 316
 Glanders, affections of trachea in ii. 15
 Gland, thymus affections of - ii. 154
 — thyroid affections of - i. 377, ii. 76
 Glands, bronchial, affection of in hereditary syphilis - - - ii. 154
 — cervical posterior - - - i. 180
 — intestinal - - - i. 321
 — graphatic, changes in - - i. 378
 — salivary - - - i. 322
 Gonorrhoea - - - i. 92
 Greeks, syphilis among the - i. 10
 Growth, arrest of, in hereditary syphilis ii. 29
- Guaiacum, use of - - - ii. 286
 GUBLER, affections of liver in hereditary syphilis - - - ii. 151
 Gummous tumours - - - i. 220
 — of bones - - - i. 237
 — of brain - - - ii. 52
 — of dura mater - - - i. 39
 — of fingers - - - i. 271
 — of joints - - - i. 251
 — in muscles of larynx - - ii. 2
 — of liver - - - i. 338
 — of lungs - - - ii. 19
 — of muscles - - - i. 265
 — of testis - - - i. 274
 — of tongue - - - i. 306
- Heart, affections of - - - i. 335, 335
 Hemiplegia - - - ii. 55, 60
 Hereditariness of syphilis, physiology of - - - ii. 253
 Hereditary syphilis, authors on - ii. 132
 — cases of - - - ii. 177
 — affections of eyes in - - ii. 168
 — affections of liver in - ii. 84, 151
 — affections of lungs in - - ii. 157
 — affections of nerves in - - ii. 162
 — affections of skin in - - ii. 139
 — affections of testis in - - ii. 149
 — arrest of development in - ii. 27
 — effusion of blood in - - ii. 156
 — period of appearance - - ii. 136
 — symptoms of - - - ii. 174
 — treatment of - - - ii. 324
 Herpes syphiliticus - - - i. 147
 HUNTER, inoculation with gonorrhoeal pus - - - i. 92
 — phases of syphilis - - - i. 66
 HUTCHINSON, affection of bronchial glands in hereditary syphilis - ii. 154
 — hereditary syphilitic ophthalmia ii. 168

- HUTCHINSON, tumour of spinal cord
 ii. 162
 — pericardium filled with blood ii. 156
 Hydrocephalus in hereditary syphilis
 ii. 162
 Hygiene, authors on, list of - ii. 269
- Icterus - - - - i. 182, 361
 Impetigo - - - - i. 210
 Incubation of syphilis - - i. 68
 — case of prolonged - - i. 71
 — cauterisation in period of - ii. 304
 India, syphilis in - - - i. 8
 Infection, cases of double - ii. 125
 Inoculation, absence of pustule of, in
 small-pox - - - - i. 94
 — from child (case) - - ii. 26
 — with gonorrhoeal pus - - i. 92
 Intestines, affections of - i. 164, 314
 Inunction of mercury, use of - ii. 311
 Iodine, use of - - - - ii. 299
 — in tertiary affections - - ii. 319
 Iritis - - - - - i. 196
 — appearance of, while patient under
 influence of mercury - - ii. 335
 — in hereditary syphilis - - ii. 168
- Jaundice - - - - i. 361, i. 182
 Jews, syphilis among the - - i. 10
 Joints, lesions of - - - i. 251
- Keratites, hereditary syphilitic
 ii. 109, 168
 Kidneys, affections of - i. 294, ii. 77
- Lachrymal ducts, lesions of - ii. 105
 LARREY's syrup - - - ii. 315
 Larynx, affections of - i. 166, 171, 248
 — character of changes in - ii. 8
 — conglomerata in - - - i. 177
 — list of authors on - - ii. 1
 Latent syphilis - - - - ii. 119
 LEE (H.), inoculation with pus from
 indurated chancre - - - i. 89
 — inoculation of chancres - i. 105
 — inoculation of syphilitic subject with
 common pus - - - - i. 106
 Legal medicine - - - - ii. 352
 Leprosy, confounded with syphilis - i. 20
 Leprosy and syphilis - - - ii. 197
 Liver, affections of (acquired) i. 253, 278
 302, 327, 330, 335, 397
 — affections of, in hereditary syphilis
 ii. 29, 76, 84, 151
 — acute yellow atrophy of - i. 358
- Liver, amyloid condition of - i. 357
 Lungs, affections of, authors on - ii. 16
 — cicatrices of - - - - ii. 20
 — gummy tumours of - - - ii. 19
 — affections of, in hereditary syphilis
 ii. 157
- Mamma, affections of - - - i. 227
 Menstruation, arrest of, with hereditary
 syphilis - - - - ii. 27
 Mercury, use of - - - - ii. 291
 — iodide of, administration of ii. 315
 — physiological effects of - ii. 329
 — in treatment of chancre - ii. 305
 — in hereditary syphilis - - ii. 327
 — in period of eruptions - - ii. 310
 — in tertiary affections - - ii. 322
 Microcephalism in hereditary syphilis
 ii. 177
 Milk, contagion by the - - - ii. 236
 — nature of in syphilis - - ii. 226
 Mineral waters, use of - - - ii. 335
 Mucous membranes, affections of i. 161
 Mucous patches (acquired) - - i. 172
 — hereditary - - - - ii. 140
 Muscles, affections of - i. 188, i. 263
 Myelitis, case of - - - - ii. 90
- Nails, diseases of (acquired) - i. 157
 — affections of, in hereditary syphilis
 ii. 146
 Nerve auditory, affections of - ii. 115
 — facial affections of - - i. 195
 — fifth, affections of - - ii. 92, ii. 98
 — fourth, affections of - - ii. 94
 — glosso-pharyngeal, affections
 ii. 97
 — ninth, affections of - - ii. 97
 — olfactory, affections of - ii. 92
 — optic, affections of - - ii. 92, ii. 109
 — pneumogastric affections of ii. 97
 — seventh, affections of - - ii. 96
 — sixth, affections of - - - ii. 95
 — splanchnial, affections of - ii. 102
 — third, affections of - - ii. 92, 93
 Nerves, affections of, in hereditary syphilis
 ii. 162
 — spinal, affections of - - - ii. 99
 Nervous system, affections of, authors
 on - - - - - ii. 35
 Neuralgia - - - - - ii. 100 i. 193
 Nodes, of bones - - - - i. 233
 — of cranium (internal) - - ii. 38
 — in cellular tissue - - - i. 220
 Oceania, syphilis in - - - - i. 52

- Œsophagus, affections of** - - - i. 311
Olfactory apparatus, changes in ii. 102
Onyxis acquired - - - i. 167 i. 218
 — hereditary - - - ii. 146
Ophthalmia syphilitic - - - i. 195
Opium, use of - - - ii. 290
Optic nerves, lesions of - - - ii. 109
Orobitis - - - i. 273
Ovaries, affections of - ii. 29, i. 282
Ovum, lesions of layers of - - ii. 172
Ozæna - - - ii. 102
- Palate, affections of** - - - i. 215, 304
Panaris - - - i. 271
Pancreas, affections of - - - i. 324
Papular syphilide - - - i. 142
Paralysis, general - - - ii. 64
 — of nerves (*see* Nerves)
PARM Ambrose, syphilitic fever - i. 125
Paronychia syphilitica - - - i. 169
Pemphigus, hereditary - - - ii. 142
Pericardium, affections of i. 384, ii. 166
Peritoneum, affections of (acquired) i. 325
 — affections of inherited syphilis ii. 150
Phagedæmic chancre - - - i. 91
Pharynx, ulcers of - - - i. 169
Phthisis, influence of syphilis in producing
 ii. 187
Pian - - - i. 30, 38
Pituitary body, affections of - i. 376
Pityriasis - - - i. 156
Platinum, use of - - - ii. 298
Plica Polonica - - - i. 217
Pneumonia, syphilitic, cases of ii. 18, 25
Pons Varolii, softening of - - ii. 60
Potassium, iodide of, use of ii. 55, 61, 299
 — in long affections - - - ii. 33
 — in neuralgia - - - i. 193
 — in tertiary affections - - ii. 319
 — physiological effects of - ii. 329
Pregnancy, specific treatment during
 ii. 325
Prevention of syphilis - - - ii. 269
Prophylaxis - - - ii. 269
Psoriasis - - - i. 151
PUCHE's syrup - - - ii. 315
Pustular syphilide - - - i. 145
- RADESYGE** - - - i. 134
RAYER, ulcerating tubercles - i. 214
Retina, lesions of - - - i. 202, ii. 109
Rhinitis - - - ii. 202
RICORD, inoculation of gonorrhœal pus
 i. 92
 — phases of syphilis - - - i. 66
- RICORD, pills of** - - - ii. 316
ROBERT (MELCHIOR), on chancre i. 102
Romans, syphilis among the - i. 10
Roseola, Mercurial - - - i. 142
 — syphilitic - - - i. 139
 — in hereditary syphilis - ii. 139
Rupia - - - i. 210
- Saint Euphemia, disease of** - - i. 138
Saint Paul's Bay, disease of - - i. 40
Salivary glands, affections of - i. 322
SEDILLOT's pills - - - ii. 314
Semen, syphilitic - - - ii. 228
SIBBENS - - - i. 34
Silva, use of - - - ii. 298
Small-pox, absence of pustule of inoculation in - - - i. 94
Spedalsked - - - i. 36
Skin, affections of - - - ii. 139
 — hereditary - - - ii. 139
Spinal cord, affections of - - ii. 83
 — tumour of, in inherited syphilis
 ii. 162
Spleen, affections of - - - i. 377
 — hereditary syphilis - - - ii. 153
Squamous syphilides - - - i. 149
Stomach, affections of - - - i. 314
Struma and syphilis - - - ii. 129
Suckling, contagion by - - - ii. 235
Supra-renal capsules, affection of i. 377
 — hereditary syphilis in - - ii. 154
SWEDIAUR, syphilitic fever - - i. 126
SWIETEN's (Van) drops - - - ii. 314
Synonyms of syphilis - - - i. page iii
Syphilides - - - i. 209
 — bibliography of - - - i. 134
Syphilisation, authors on - - - ii. 343
Syphilis, in animals - - - ii. 363
 — determining causes of - - ii. 259
 — definition of - - - i. 64
 — duality of - - - ii. 103
 — eruptive stage of - - - i. 135
 — evolution of - - - ii. 119
 — false, local - - - i. 95
 — general diagnosis of - - - ii. 191
 — geographical distribution of i. 45
 — hereditary (*see* Hereditary)
 — history of - - - i. 1
 — incubation - - - i. 69
 — influence of on other diseases ii. 184
 — influence of treatment on - ii. 123
 — latent condition of - - - ii. 119
 — medico-legal aspect of - - ii. 352
 — poison of, on the - - - ii. 208
 — prevention of - - - ii. 269

- Syphilis, primary, conditions simulating
 i. 119
 — prognosis of - - - ii. 203
 — stages of - - - i. 66
 — synonyms of - - - i. page iii
 — tertiary - - - i. 205
 — transmission of - - ii. 223, 250
 — treatment of - - - ii. 283
 — treatment of, period of eruption
 ii. 310
 — treatment of, period of incubation
 ii. 304
 — treatment of tertiary affections ii. 319
 — unity of - - - i. 103
 — varieties of - - - ii. 179
 — without chancre - - - i. 193
- TARDIVU, affections of trachea in glanders - - - ii. 16
 Testis, affections of i. 192, 273, 349, ii. 149
 Thymus gland, in hereditary syphilis
 ii. 154
 Thyroid, affections of - ii. 76, i. 377
 — changes in - - - ii. 76
 Tongue, gummy tumours of - i. 306
 Trachea, affections of, authors on ii. 8
 — affections of, in glanders - ii. 15
 Treatment - - - ii. 283
 — hereditary syphilis - - ii. 324
 — new-born child - - - ii. 325
 — of period of eruption - - ii. 310
- Treatment, of pregnant women - ii. 325
 — of tertiary affections - - ii. 319
 — summary as to - - - ii. 350
 Tubercular syphilide - i. 142, 212
 Tubercles in hereditary syphilis - ii. 145
 Tumours, gummos (see Gummos)
 TURCK, affections of larynx - ii. 5
- Ulcers, superficial, of larynx - i. 169
 Unity of syphilis - - - i. 103
 Urethra, affections of - - - i. 293
 Urine, albumen in - - - ii. 77
 — increase in quantity - - ii. 74
 — sugar in - - - ii. 72
 Uterus, affections of - - - i. 289
 — case of inherited syphilis - ii. 29
- Vaccination, contagion by - - ii. 238
 — influence of - - - ii. 349
 Veins, affections of - - - i. 404
 Vesicular, syphilide - - - i. 147
 VIRCHOW, gummos tumours - i. 221
 — stages of syphilis - - - i. 66
 Vitreous, affections of - - - i. 200
 Voice, change of - - - i. 166, i. 177
- Warts - - - i. 179
 Water cure - - - ii. 335, 339
 WILKS, case of paraplegia - ii. 85
 — syphilitic tumours of larynx ii. 4
 — affections of trachea - - ii. 10



